

**Construction and Maintenance
of Wastewater Pipelines and
Lift Stations and
Installation of Fiber Optic
Conduit at
Eglin Air Force Base, Florida**

Prepared for

Eglin Air Force Base

Prepared by

**U.S. Army Corps of Engineers,
Mobile District**

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**FINDING OF NO SIGNIFICANT IMPACT AND
FINDING OF NO PRACTICABLE ALTERNATIVE
CONSTRUCTION AND MAINTENANCE OF WASTEWATER PIPELINES AND
LIFT STATIONS, AND INSTALLATION OF A FIBER OPTIC CONDUIT
EGLIN AIR FORCE BASE, FLORIDA**

Pursuant to the Council on Environmental Quality regulations for implementing the procedural provisions of the National Environmental Policy Act (NEPA), Title 40 of the Code of Federal Regulations (CFR), §§ 1500-1508; Air Force Environmental Impact Analysis Process (EIAP) regulations 32 CFR § 989 and Department of Defense Directive 6050.1, the Air Force has prepared an environmental assessment (EA) to identify and evaluate the potential impacts on the natural and human environment associated with construction and maintenance of wastewater pipelines and lift stations, and installation of a fiber optics conduit on Eglin Air Force Base (AFB), Florida.

Purpose and Need for Proposed Action (EA § 1.3, page 1-8)

The Proposed Action is part of a larger effort to privatize wastewater collection and treatment on Eglin AFB. The base currently operates its own wastewater treatment plants (WWTPs) and disposes of the wastewater effluent and sludge to designated spray irrigation fields and a land application site. Privatizing the WWTPs and leasing the spray irrigation fields to the Okaloosa County Water and Sewer (OCWS) would reduce Air Force cost to operate and maintain these facilities on a life cycle analysis basis and would increase wastewater treatment efficiencies. Upon completion of the project, Eglin AFB would cease operation of its WWTPs and transfer wastewater to the OCWS Arbennie Pritchett Water Reclamation Facility (APWRF), a new state-of-the-art facility constructed by OCWS on Eglin AFB south of Range Road (RR) 234 and RR 636 intersection, about 5 miles west of Eglin main base.

Because the existing fiber optics infrastructure is inadequate to meet current needs within the area, as part of the Proposed Action, a fiber optics conduit would be installed at a shallower depth than the pipelines. This would allow for future growth of the fiber optic capacity, which would enhance telecommunications to military missions within the area.

Description of Proposed Action and Alternatives

The Proposed Action is primarily to convey Eglin AFB wastewater to the OCWS APWRF and consists of the following components (EA §2.1, page 2-1):

- Construction of a new wastewater pipeline to connect the Camp Rudder area with the 7th Special Forces Group (7SFG) force main, which leads to the APWRF.
- Construction of a new wastewater pipeline to connect the Eglin main base cantonment area with the existing effluent line, a raw sewage line, leading to the APWRF. Approximately 1.6 miles of existing pipe would be replaced with stronger-walled pipe sufficient for operation of a force main.
- Construction of three new lift stations: one at the northern end of the proposed Camp Rudder wastewater line and two inside the fence of Eglin main base to pump to the Plew Sewage Treatment Plant (STP) line.
- Installation of fiber optics conduit parallel to the wastewater pipelines within the same construction corridor at a shallower depth than the lines and offset by 5 feet (ft) laterally.

Demolition or disposition of existing facilities that would be removed from service following privatization of the Eglin AFB wastewater system is not part of the Proposed Action. Eglin AFB has not yet determined the ultimate disposition of these facilities. When a final decision is made, Eglin AFB would complete a separate environmental analysis.

Alternatives Considered but Not Carried Forward (EA § 2.3, pages 2-2 to 2-5)

Two new wastewater lines would be installed to transport effluent from the Camp Rudder area and the Eglin main area to the APWRF. During alternative development, Eglin AFB and OCWS considered land use impacts, environmental impacts, cost and construction feasibility. For the Camp Rudder line, four alternatives were considered (EA Figure 2-1), but only Alternative 1 was carried forward for further analysis. The other three alternatives were eliminated from further analysis because they would (1) have a greater impact on the critical habitat of the threatened and endangered red-cockaded woodpecker (RCW), (2) would potentially impact a sensitive cultural site, (3) pass through a residential area where children play, creating a safety risk during construction, or (4) would have higher construction cost due to technical issues associated with equipment access and construction in steephead valleys.

Three alternatives were considered for the Eglin main line (EA Figure 2-2), with two being carried forward for further analysis. Alternative B was dismissed from further analysis because of the potential impacts to wetland areas and greater extent of forest clearing.

Preferred Alternative

Camp Rudder Line Alternative 1 (EA § 2.4.1, page 2-7)

Camp Rudder Line Alternative 1 would consist of an 8-inch diameter pipeline originating at the intersection of RR 236 and RR 213, where the new line would connect with the 7SFG force main. From this connection point, the route would follow the north side of RR 213 to its intersection with RR 257. The line would then follow the east side of RR 257 to the Camp Rudder fence. Inside the fence, the route would remain on the east side of RR 257 and continue east toward the pool area. From the pool area, the route would follow the unpaved service road to the Camp Rudder WWTP. A new lift station would be built between the pool area and the Camp Rudder WWTP to push the wastewater through the pipe.

Where the route parallels RR 213 and RR 257, the wastewater pipeline would be placed outside the existing cleared right-of-way (ROW). For approximately 700 ft along the north side of RR 213, the route would be relocated south away from longleaf pine forest and into the existing cleared ROW on either the north or south side of the road to avoid impacts to the RCW habitat. No tree clearing would be required through Camp Rudder until the section between the pool area and the WWTP, where it would be necessary to clear 0.5 acres of xeric hardwood forest adjoining the service road.

Eglin Main Line (EA §§ 2.4.2, 2.4.2.1, pages 2-7 to 2-8)

A 24-inch diameter pipeline would be installed along the Eglin main line route. Wastewater would be pumped through this line to connect with existing pipelines, which would convey the wastewater to the APWRF. Two new lift stations would push the wastewater through the Eglin main line to Plew Sewage Treatment Plant (STP) line. Two Eglin main line alternatives were carried forward for detailed analysis: the Preferred Alternative and Alternative A. These two alternatives coincide west of Garnier Creek and south of the intersection of General Robert M. Bond Boulevard and State Route (SR) 85, but differ between Garnier Creek and this intersection. The following sections describe the

common portions of the route and then the two alternatives for the portion between Garnier Creek and SR 85.

The Eglin main line would originate at intersection RR 236 and RR 636, which would be the connection point to the 7SFG force main. The route would extend eastward down the middle of the Eglin AFB electric transmission ROW. The route would then continue eastward within the transmission ROW until intersecting the Gulf Power electric transmission ROW east of Garnier Creek. The pipeline would stay within the established ROW for this portion of the route and no tree clearing would result.

At the intersection of General Robert M. Bond Boulevard and SR 85, two alternatives converge and the route would turn south. A new 20-inch diameter pipe would be placed parallel and to the west of SR 85 to a point opposite the proposed new lift station (approximately 0.4 miles). Directional bore crossings would be used to place the pipe beneath General Robert M. Bond Boulevard and SR 85 and the new line would tie into the lift station. The existing line south of the lift station would be replaced with 16-inch diameter pipe for approximately 1.2 miles to connect with the existing 18-inch diameter line to the Plew STP just south of Eglin Boulevard. A directional bore crossing would be used to place the pipe beneath Eglin Boulevard.

Eglin Main Line Preferred Alternative (EA § 2.4.2.2, page 2-8)

The northern portion of the Eglin main Preferred Alternative would follow the west side of the Gulf Power ROW south to General Robert M. Bond Boulevard. The Preferred Alternative would stay within previously cleared ROW to the extent practicable, but portions of the route would require clearing of up to an approximately 30-ft wide by 200-ft long area of mixed pine-hardwood forest along the west side of the ROW around each Gulf Power transmission tower guy wire anchor. Up to 2.9 acres of mixed pine-hardwood forest would be cleared. There are two possible options for the southern part of the Preferred Alternative:

- Preferred Alternative 1 - Follow the north side of General Robert M. Bond Boulevard to connect with the common portion of SR 85.
- Preferred Alternative 2 - Follow the south side of General Robert M. Bond Boulevard to connect with the common portion of SR 85. Preferred Alternative 2 would include a directional bore crossing to reach the south side of General Robert M. Bond Boulevard, but would not have a directional bore crossing at SR 85.

Eglin Main Line Alternative A (EA § 2.4.2.3, page 2-8)

Alternative A continues along the Eglin electric transmission ROW to the northwest corner of the Eglin AFB spray irrigation fields. At this point, the route departs from the ROW and would connect with new 20-inch diameter pipe that would follow the west side of SR 85 to General Robert M. Bond Boulevard where it would reconnect with the southern common portion of the route. Up to 0.3 acres of longleaf pine forest would be cleared to construct Alternative A.

Lift Stations along Plew STP Line (EA § 2.4.3, page 2-9)

It would be necessary to construct two new lift stations along the Plew STP line to move wastewater through the proposed Eglin main line. The locations of the two lift stations were selected based on how best to maintain flow through the pipes (i.e., topography and physics). One proposed lift station would be built in the vicinity of the Eglin main base WWTP south of Nomad Road and the other would be built in the vicinity of the Plew STP. Alternative locations for the lift stations are not

technically feasible. The lift stations would result in disturbance of up to an approximately 100-ft by 100-ft area and would include additional piping to support the lift stations.

Fiber Optics Conduit (EA § 2.4.4, page 2-9)

A fiber optics conduit would be placed parallel to the new wastewater pipelines and offset by 5 ft laterally. After the new pipelines are constructed and the trenches are backfilled, a fiber optics conduit would be plowed into the same disturbed area prior to final soil stabilization. The fiber optics lines would be strung into the conduit at a later time with no additional environmental disturbance.

No Action Alternative (EA § 2.6, page 2-10)

Under the No Action Alternative, Eglin AFB would continue to provide wastewater collection and treatment to the Camp Rudder area and to the cantonment area using existing facilities. System capacity would not be increased and the existing system would remain in use requiring higher maintenance efforts. The No Action Alternative is the baseline for the rest of the analyses and helps determine the level of impact the Proposed Action would have on the environment.

Environmental Consequences

Environmental analyses focused on the following areas: climate, geology, topography, soils, noise, air quality, groundwater, surface water, wetlands, hazardous and toxic substances, cultural resources, flood hazard, visual resources, biological resources, and socioeconomic resources. Environmental justice and protection of children were eliminated from further study (EA §2.2, pages 2-1 to 2-2) since the proposed action did not impact these areas. The findings are summarized below.

Climate (EA §§ 4.1.1 – 4.1.2, page 4-1): Construction and operation of three lift stations, two new wastewater pipelines, and fiber optics conduit would not cause a direct change to the regional climate. There would be green house gases released during construction of the three lift stations, two new wastewater pipelines, and fiber optic conduit. Potential sources include land clearing/onsite equipment use, transport of materials and traffic delays. Total emission generated during construction would be below 25,000 metric tons, the U.S. EPA mandatory reporting rule. There would be no impacts to climate under the No Action Alternative.

Geology/Topography/Soils (EA §§ 4.1.3 – 4.1.5, page 4-2): Construction of the proposed lift stations, wastewater pipelines, and fiber optic conduit would occur at surface levels and not disturb the underlying bedrock nor would the topography be noticeably altered. Site grading would restore the impacted area to the original contours. Disturbed soils would be covered by gravel or concrete within the lift station footprint and stabilized through reseeding and mulching if outside the footprint. Under the No Action Alternative, the physical environment would not be impacted.

Noise (EA § 4.1.6, page 4-2): Construction and operation of the lift stations would not significantly increase noise levels on Eglin AFB or the areas surrounding the proposed Eglin main line. Any impacts from noise would be temporary and minor due to construction activities and would cease once the project was completed. Under the No Action Alternative, noise would not be impacted.

Air Quality (EA § 4.1.7, page 4-3): Mobile source emissions from construction equipment would occur under the Proposed Action. However, the construction period would be of short duration and the exhaust from construction equipment onsite would be minor compared to the typical traffic on SR 85 and SR 189. Any impacts would be temporary and less than significant. During site preparation and general construction, fugitive dust emissions could occur, which would be temporary and cease

once the project was completed. Because the state of Florida is in attainment status for all criteria air pollutants, conformity analysis was not required for the Proposed Action. There would be no impacts to air quality under the no action alternative.

Groundwater (EA § 4.1.8, page 4-3): Under the Proposed Action, no activities would occur to impact site or regional groundwater. Indirect impacts could occur if one of the pipes was to develop a leak and wastewater was to reach the surficial aquifer before the pipe could be repaired. Regular pipe inspection and maintenance by OCWS would minimize this risk. Under the No Action Alternative, no impacts to geohydrology or water quality would result.

Surface Water/Wetlands (EA § 4.1.9 – 4.1.10, pages 4-3 to 4-5): Several natural streams occur within the general area of the Proposed Action. These include Metts Creek, Yellow River, Milligan Creek, Garnier Creek and its unnamed tributary (EA Figures 3-1 and 3-2). The water quality standards within the project area are classified as good. Wetland delineation was conducted along the proposed project routes, which identified several locations. Wetland areas were found along Garnier Creek and its unnamed tributary where the proposed Eglin main line would be installed. In addition several large and small emergent/scrub-shrub wetlands were observed north and south of the proposed project route.

The Proposed Action would have negative impacts to surface water and wetland areas within the project site. To minimize these impacts, the area would be graded to retain stormwater onsite, allowing water to infiltrate the soil. In addition, the OCWS will prepare construction plans to address erosion control, including appropriate best management practices (BMPs) to be implemented and maintained to minimize the potential for sediment erosion or turbidity impacts to surface waters/wetland areas. These BMPs could include, but would not be limited to, implementation of good housekeeping techniques, installation of gravel construction entrances, use and maintenance of silt fencing, temporary stormwater detention areas with sediment filters, soil stabilization with seed and mulch, and temporary ROW diversions. The OCWS will obtain a Joint Environmental Resource Permit from the Florida Department of Environmental Protection (FDEP) for crossing of Garnier Creek and its tributary, pursuant to Chapter 62-343 of the Florida Administrative Code (FAC). These plans will ensure the creeks and associated wetlands within the project area are not affected by pipeline construction. These plans will also address access to work areas, positioning of drilling rigs, and management of work and staging areas. Implementation of the Frac-Out Plan for directional bore for construction of the Eglin main line will minimize the potential for immediate and downstream impacts to aquatic habitats and wetland areas in the event of a release of drilling mud during the directional bore crossings of streams. The OCWS will request a concurrence letter from the U.S. Army Corp of Engineers that a Clean Water Act Section 404 permit is not required as part of the joint permit application. Conditions of the plan will be overseen and monitored by an engineering inspector to ensure construction is in compliance with permit requirements. The OCWS will obtain both a general permit for construction of a wastewater collection/transmission system from FDEP, pursuant to FAC 62-604 and a National Pollutant Discharge Elimination System (NPDES) stormwater permit from FDEP, pursuant to Chapter 62-621 of the FAC, prior to any ground-disturbing activities. The NPDES permit will include a Stormwater Pollution Prevention Plan (SWPPP), which is filed as part of the pre-construction activities. Under the No Action Alternative, there would be no impact to surface water and wetland areas.

Hazardous and Toxic Substances (EA § 4.1.11, pages 4-5 to 4-6): There would be no impacts to hazardous and toxic substances with implementation of the Proposed Action. No fuels or petroleum products would be stored in the project area nor would equipment maintenance be performed onsite. The project design would require use of appropriate BMPs for all refueling activities to minimize the risk of contamination from an accidental spill of petroleum products during construction. Any such

small release would constitute a less than significant impact on the environment. There would be no impacts to hazardous and toxic substances under the No Action Alternative.

Unexploded ordnance (UXO) may be present in the soil along the southern portion of the Camp Rudder line route. Therefore, UXO survey will be conducted by one or more active duty explosive ordnance disposal specialists or UXO qualified personnel prior to any ground intrusive activity. This survey will be utilized by Air Armament Center Safety Element Weapons to determine the explosive safety requirements and procedures that will be implemented to protect personnel and property during construction. The UXO identified during the survey will be properly disposed of by UXO qualified personnel prior to construction.

Traffic (EA § 4.1.11, page 4-6): Construction and operation of three lift stations and the fiber optics conduit would not have an appreciable effect on traffic. However, temporary disruption of traffic flow could occur during construction. Any disruptions would likely be temporary and negligible. There would be no impacts to traffic under the No Action Alternative.

Cultural Resources (EA § 4.1.13, page 4-6): An archaeological cultural resources survey was completed for the project area. During this survey, seven new sites were identified and the boundaries of two known sites were expanded. All of the sites have been evaluated as ineligible for nomination to the National Register of Historic Places requiring no further work. The State Historic Preservation Office concurred on September 13, 2011 with these findings and determined the planned project will not have an effect on eligible resources (Appendix A). Should project work reveal new findings of potentially significant cultural resources, such findings will be processed under 36 CFR §800.13 and applicable provisions of Eglin AFB's Integrated Cultural Resources Management Plan. Following Eglin AFB's working practice for consulting federally recognized tribes, Eglin determined there was nothing of cultural interest to the tribes, and therefore they were not contacted. There would be no impacts to cultural resources under the No Action Alternative.

Flood Hazard (EA § 4.1.14, page 4-7): The proposed Camp Rudder Line and the two proposed lift stations on the APWRF line would not be within flood prone areas. The proposed Eglin main line would cross two streams but directional boring would avoid direct impacts. Therefore, implementation of the Proposed Action would not alter any floodplains. Under the No Action Alternative, there would be no impacts to floodplains or flood hazards.

Visual Resources (EA § 4.1.15, page 4-7): The majority of the Proposed Action area is surrounded by unimproved lands, range roads, and overhead electric transmission lines. Any impact on visual resources resulting from construction and operation of the Proposed Action would be negligible. Under the No Action Alternative, there would be no impacts to visual resources.

Biological Resources (EA § 4.1.16, pages 4-7 to 4-15): Minor impacts to flora and fauna would occur during construction. Site preparation and pipeline construction could cause animals to temporarily relocate from the project area to adjoining habitats. However, on completion of the project, animals would likely return to the project site.

There are known rare/protected species as well as designated critical habitat occurring within the proposed project area. The threatened and endangered species field survey conducted on October 12-13, 2010 found an inactive gopher tortoise burrow and evidence (tracks) of recent activity within the proposed Eglin main line project area. While no eastern indigo snakes were observed during reconnaissance efforts; as noted in EA Section 3.2.12.3, eastern indigo snakes can inhabit areas where gopher tortoises are active. Because of the elapsed time between the field survey and project construction, the project area will be surveyed again, approximately 60 days prior to planned start

date. Any gopher tortoises and/or eastern indigo snakes encountered would be relocated by Eglin AFB natural resources staff as authorized by U.S. Fish and Wildlife Permit TE207027-0.

The project area falls within the critical habitat of the RCW. Numerous cavity trees used by the birds during breeding season were encountered along the Camp Rudder line route. Known as RCW clusters, tree clearing activities under the Proposed Action would impact 10 sites. The Eglin AFB RCW foraging habitat model determined seven of the ten clusters would not lose enough resource from proposed clearing to result in a significant change in habitat value from the current designation of Recovery Standard. Two of the three remaining clusters are below the Recovery Standard established for Eglin AFB and would result in only minor impacts to RCW habitat. However, removal of trees from the third site (RCW Cluster 907E) would adversely affect the RCW habitat; therefore, the line would be re-routed through this area by placing it on the north or south side of RR 213 in the cleared ROW.

Eglin AFB natural resources staff determined construction activities, including land clearing, will not be allowed within 200 ft of cavity trees during the breeding season (April through July) along portions of the Camp Rudder line. In addition, Eglin AFB will conduct a pre-construction survey of known and potential cavity trees in proximity to the Camp Rudder line and will establish additional work exclusion areas around any newly identified trees as needed.

In accordance with Section 7 of the Endangered Species Act, consultation with the United States Fish and Wildlife Service has been completed. The agency concurred with the guidelines described within Biological Assessment (BA) provided to them by Eglin AFB on March 31, 2011. This BA describes guidelines under which the project must be completed to minimize potential impacts to threatened and/or endangered species (Appendix D). There would be no impacts to biological resources under the No Action Alternative.

Socioeconomics (EA § 4.2, pages 4-15 to 4-17): Implementation of the Proposed Action is consistent with the land use of the area as an interstitial buffer for military activities. There would be no socioeconomic impacts related to land use. The Proposed Action would improve telecommunications infrastructure and wastewater infrastructure on Eglin AFB with no adverse impacts to non-military utility infrastructure. Implementation of the Proposed Action would result in an upgrade of the existing wastewater treatment services by increasing system capacity and replacing older, less effective technologies. No impacts to other utilities are expected.

The Proposed Action would have a temporary, positive impact on jobs and employment during the construction phase. In addition, the transfer of Eglin AFB wastewater treatment services to OCWS would have a positive impact on employment opportunities for the community through OCWS. The proposed project areas are access-controlled and not always accessible by the public. There would be no appreciable impacts to recreational activities on Eglin AFB.

The construction sites and lift stations would be secured to prevent accidental entry by unauthorized users. The construction contractors will be required to have approved health and safety plans implemented to protect workers during construction. No safety impacts are expected to result from implementation of the Proposed Action. Installation of the pipelines, lift stations, and fiber optics conduit would be fully coordinated with the Eglin AFB Range Operations Control Committee (ROCC) and the 46th Test Wing to ensure features such as fencing, roads, vegetative barriers, etc., do not affect the Eglin mission. Coordination with the ROCC and 46th Test Wing would be accomplished by OCWS during initial site design and coordination with the ROCC would occur each construction day as the construction contractor enters and exits Eglin AFB. Under the No Action Alternative, there would be no impacts to land use, utilities, jobs and employment, recreation, or safety.

Cumulative, Irreversible, and Irretrievable Impacts (EA §§ 4.3 – 4.4, pages 4-15 to 4-16): A highway project is currently being implemented in the immediate vicinity of the proposed Eglin main line. No significant interaction between these two projects is expected. As discussed in EA § 4.1.15.3, future projects that would result in loss of RCW habitat would have the potential to incrementally add to the loss that would result from the Proposed Action. However, because of the amount of RCW habitat in the region and the small impact of the Proposed Action, any incremental contribution to loss of RCW habitat would likely be minor. No other actions are foreseen that would lead to further cumulative impacts, since the majority of the Eglin main line and Camp Rudder line are within portions of Eglin AFB that will not be developed in the foreseeable future. While there would be long-term conversion of habitat types, there would be no irreversible or irretrievable impacts associated with the Proposed Action.

Mitigations (EA § 4.6, pages 4-17 to 4-23)

As the proponent for installing and maintaining the wastewater pipelines and lift stations, OCWS is responsible to ensure the mitigations identified above are in place prior to taking any specific action. The Air Force (through Eglin AFB) will oversee and verify mitigations are fully funded by the proponent, in place and being carried out as identified in this Finding of No Significant Impact (FONSI) and the Mitigation and Monitoring Plan (MMP). The MMP will be developed subsequent to this FONSI and will include points of contact for oversight and completion of the mitigation as well as the anticipated timing for mitigation completion. It is expected the mitigation monitoring will generally consist of on-the-ground inspections and any subsequent actions necessary to address deficiencies discovered during the inspections. The EA refers to the use of BMPs. For this FONSI and in compliance with Air Force regulation, BMPs will be carried forward and monitored in the MMP.

Public Review

A public notice was published in the *Northwest Florida Daily News* on December 26, 2011, beginning the 15-day public comment period, which ended January 9, 2012. No comments were received during this period. A second public notice was published in the *Northwest Florida Daily News* on April 9, 2012, beginning a second public comment period that ended on April 27, 2012. No comments were received during this period. The EA was submitted to the FDEP State Clearinghouse for a 60-day agency review that ended on February 26, 2012. Comments received from the Clearinghouse are provided in Appendix A and were given consideration in the EA.


FINDING OF NO PRACTICABLE ALTERNATIVE

Taking the above information into consideration, pursuant to Executive Order 11990 (*Protection of Wetlands*) and the authority delegated by Secretary of the Air Force Order 791.1, I find that there is no practicable alternative to conducting the Proposed Action within the wetlands and the Proposed Action includes all practicable measures to minimize harm to the environment. This finding fulfills both the requirements of the referenced Executive Order and the Air Force EIAP regulation, 32 CFR § 989.14, for a Finding of No Practicable Alternative.

FINDING OF NO SIGNIFICANT IMPACT

Based upon my review of the facts and analyses contained in the attached EA and as summarized above, I find the Proposed Action to allow OCWS to construct and maintain the wastewater pipelines, lift stations, and fiber optic conduit at Eglin AFB will not have significant impact on the natural or human environment; therefore, an environmental impact statement is not required. This analysis fulfills the requirement of NEPA, the President's Council on Environmental Quality 40 CFR § 1500-1508 and the Air Force EIAP regulations 32 CFR § 989.

A MMP will be developed and implemented prior to the start of construction activities, but no later than 90-days from the date of this FONSI.



JEFFREY M. TODD, Colonel, USAF
Command Civil Engineer
Deputy Director of Communications,
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8 June 2012

Date

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Acronyms and Abbreviations

°F	degrees Fahrenheit
7SFG	7 th Special Forces Group
AAC/SEW	Air Armament Center Safety Element Weapons
AFB	Air Force Base
AFI	Air Force Instruction
APWRF	Arbennie Pritchett Water Reclamation Facility
AST	aboveground storage tank
bls	below land surface
BMP	best management practice
CAA	Clean Air Act
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CH ₄	methane
CO ₂	carbon dioxide
CO ₂ e	carbon dioxide equivalent
CWA	Clean Water Act
CZMA	Coastal Zone Management Act
DoD	Department of Defense
EA	Environmental Assessment
EBS	Environmental Baseline Survey
EO	Executive Order
EOD	Explosive Ordnance Disposal
ERP	Environmental Resources Permit
ESA	Endangered Species Act
FAC	Florida Administrative Code
FDEP	Florida Department of Environmental Protection
ft	foot, feet
FWC	Florida Fish and Wildlife Conservation Commission
GHG	greenhouse gas
HFCs	hydrofluorocarbons

msl	mean sea level
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
N ₂ O	nitrous oxide
NPDES	National Pollutant Discharge Elimination System
NRB	Natural Resources Branch
NRCS	Natural Resources Conservation Service
NRHP	National Register of Historic Places
OCWS	Okaloosa County Water and Sewer
O&M	operation and maintenance
PCB	polychlorinated biphenyl
PFCs	perfluorocarbons
PL	Public Law
RCRA	Resource Conservation and Recovery Act
RCW	red-cockaded woodpecker
ROCC	Range Operations Control Committee
ROW	right-of-way
RR	Range Road
SF ₆	sulfur hexafluoride
SHPO	State Historic Preservation Office
SR	State Road
STP	Sewage Treatment Plant
SWPPP	Stormwater Pollution Prevention Plan
T&E	threatened and endangered
USAF	United States Air Force
USC	U.S. Code
USACE	U.S. Army Corps of Engineers
USDA	United States Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
UST	underground storage tank
UXO	unexploded ordnance
WWTP	Wastewater Treatment Plant

1.0 Introduction

1.1 Proposed Action

Okaloosa County Water and Sewer (OCWS) proposes to construct and maintain two new wastewater pipelines and three new lift stations and to install fiber optic conduit parallel to the new wastewater pipelines on Eglin Air Force Base (AFB) (Figure 1-1). The new wastewater pipelines would connect with existing pipelines and would convey Eglin AFB wastewater to the OCWS Arbennie Pritchett Water Reclamation Facility (APWRF), which is located on Air Force property north of Fort Walton Beach. The system would be a combination of force mains, which use pumps to convey effluent, and gravity lines. One lift station would be constructed at the northern end of the proposed Camp Rudder wastewater line, and two lift stations would be constructed inside the fence of Eglin main base to pump into the existing effluent main from the Plew Sewage Treatment Plant (STP). OCWS also would place fiber optic conduits parallel to the new wastewater pipelines. One of the proposed pipelines (Camp Rudder Line) would be constructed between Camp Rudder and the existing force main serving the 7th Special Forces Group (7SFG) area, and the other (Eglin Main Line) would be constructed just outside of the Eglin main base cantonment area between the existing effluent main line from the Plew STP and the existing 7SFG Force Main. The Plew STP line would be converted from an effluent force main, which currently conveys effluent from the facility to the Eglin AFB spray irrigation fields, to a raw sewage force main.

Demolition or disposition of existing facilities that would be removed from service following privatization of the Eglin AFB wastewater system is not part of the Proposed Action. Eglin AFB has not yet determined the ultimate disposition of these facilities. When a final decision on disposition is made, Eglin AFB would complete a separate analysis of the impacts of that action, which would include analysis of potential cumulative impacts with regard to the Proposed Action.

The land where the proposed pipelines would be constructed is owned by Eglin AFB. OCWS would obtain easements from Eglin AFB to construct and maintain the pipelines. OCWS would construct and maintain one new lift station on the Camp Rudder Line and would construct two new lift stations on the existing line between the point near where the Eglin Main Line would connect with the 7SFG Force Main and the Plew STP line.

1.1.1 Camp Rudder Line

The Camp Rudder Line (Figure 1-2) would consist of an up to 8-inch-diameter pipeline that would originate at the Camp Rudder Wastewater Treatment Plant (WWTP) and connect with the 7SFG Force Main. The final pipe size would be determined during the design phase but would not exceed 8 inches.

The Camp Rudder Line route would start at the Camp Rudder WWTP and follow an unpaved service road to the pool area. From the pool area, the route would continue generally west to Range Road (RR) 257, where it would follow the east side of RR 257

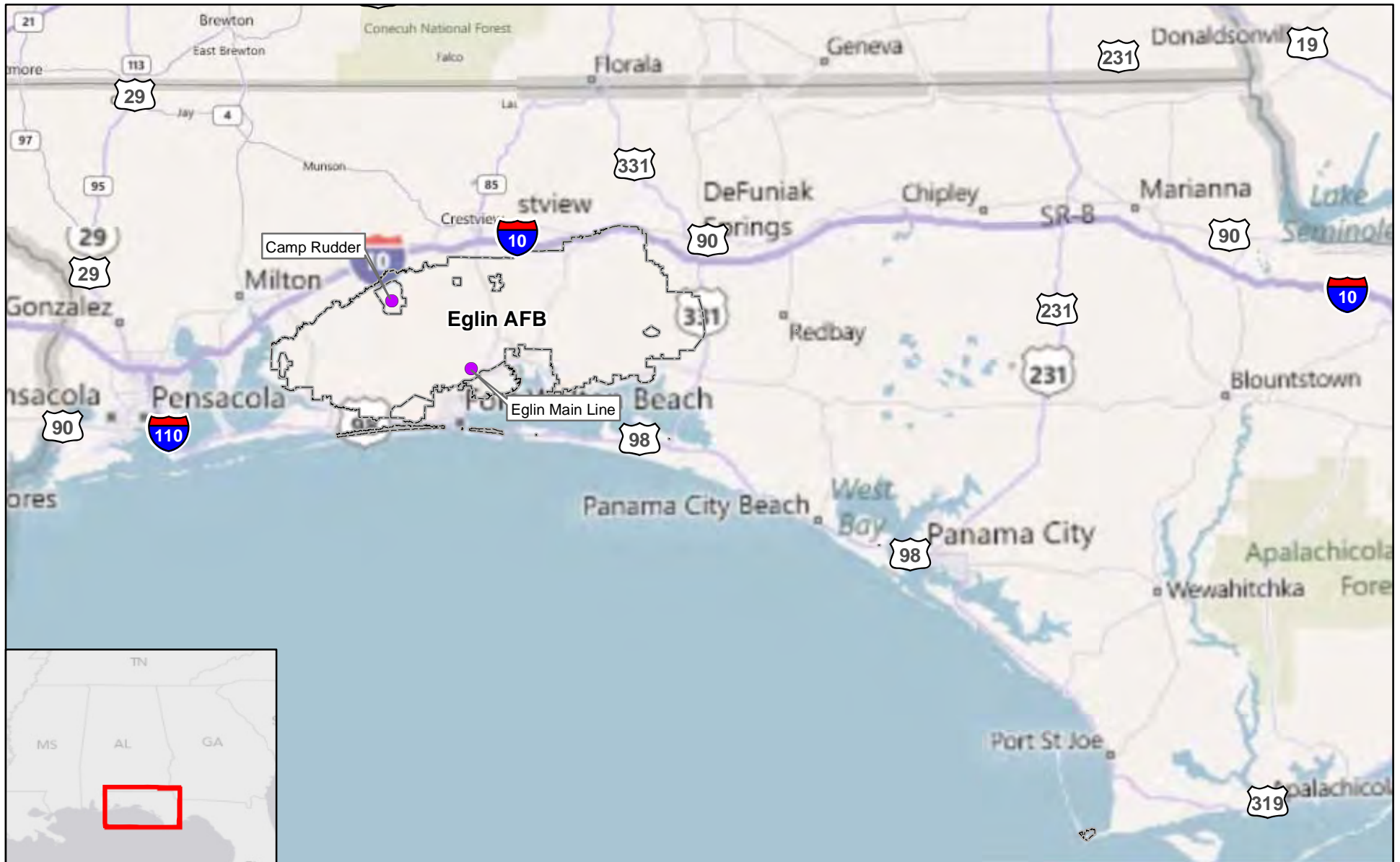
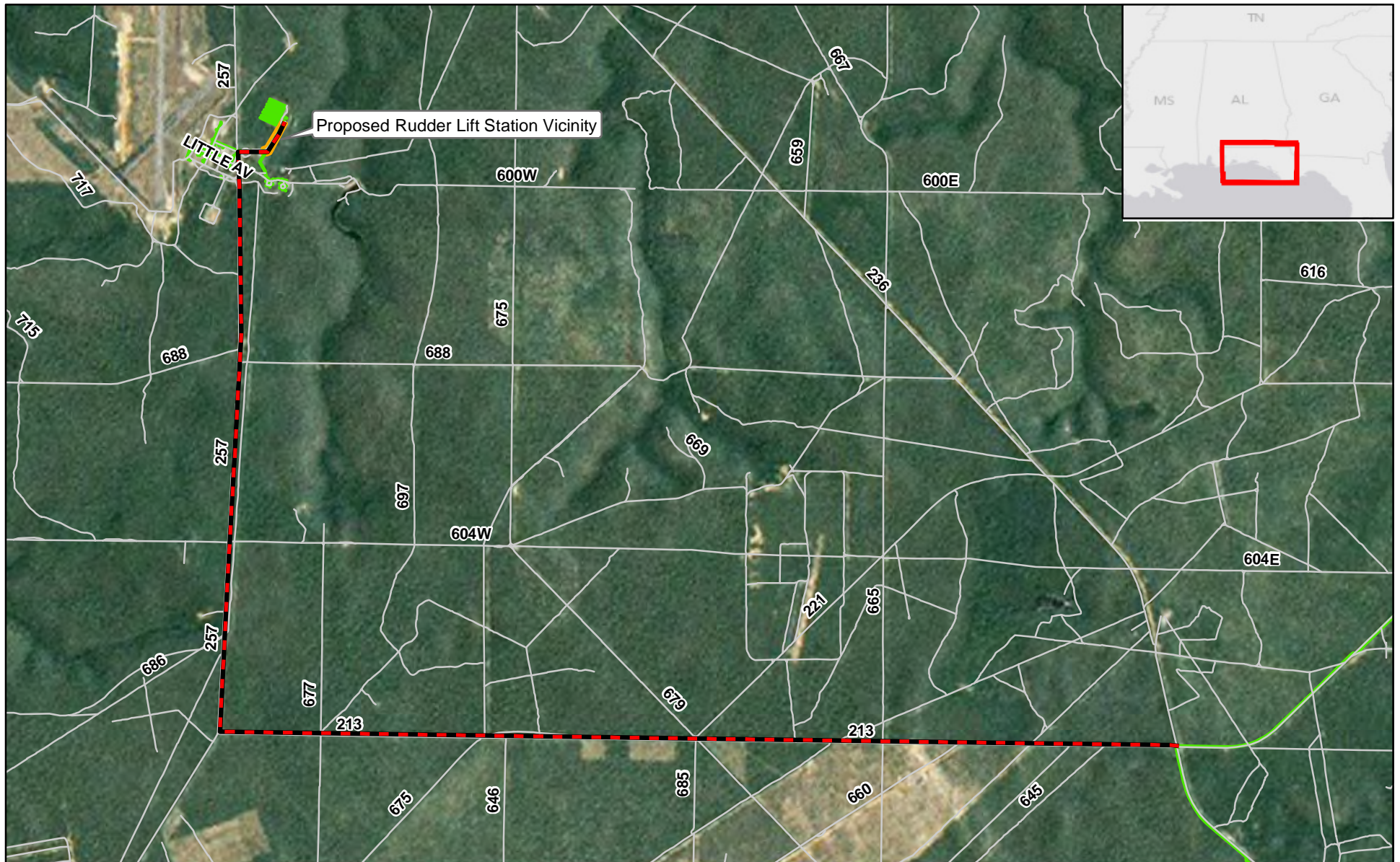




Figure 1-1
Location Map
Eglin Air Force Base



-  Proposed Camp Rudder Line
-  Existing Wastewater Line

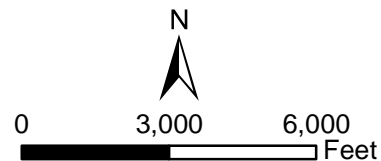


Figure 1-2
Proposed Camp Rudder Line and Lift Station
Eglin Air Force Base

through the fenced area. Once outside the fenced area, the route would continue to follow the east side of RR 257 to its intersection with RR 213. From the intersection of RR 257 and RR 213, the route would generally follow the north side of RR 213 to RR 236. The pipeline would be placed beneath RR 236 by directional bore and connect with the 7SFG Force Main. In addition to the new wastewater pipeline, a new lift station would be built between the pool area and the Camp Rudder WWTP to push the wastewater through the pipe.

Where the route parallels RR 213 and RR 257, the line would be placed outside the existing cleared right-of-way (ROW). This would require clearing longleaf pine (*Pinus palustris*) forest from a strip up to 15 feet (ft) wide along these roads. For approximately 700 ft along the north side of RR 213, the route would be relocated south into the existing cleared ROW on either the north or south side of RR 213 to avoid impacts to red-cockaded woodpecker (*Picoides borealis*) (RCW) habitat. This portion of the line would be constructed by trenching in the cleared ROW, if the location of existing buried utility lines allows, or by directional bore underneath existing lines. If a route on the south side of the road is selected, a directional bore would be used to cross the road at each end.

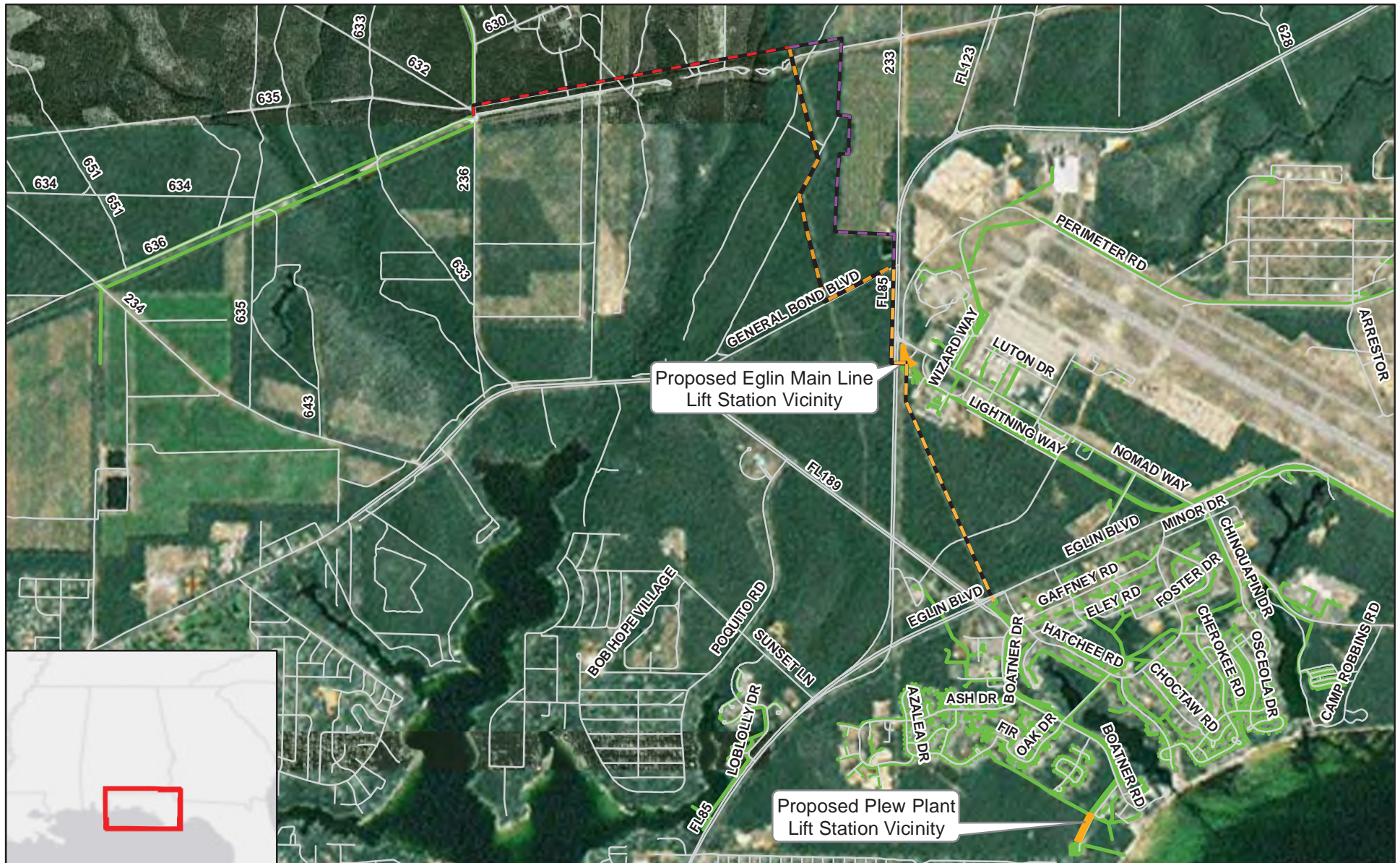
No clearing would be required through Camp Rudder except for the section between the pool area and the WWTP, where clearing a strip of approximately 15 ft of xeric hardwood forest would be required. An approximately 100-ft by 100-ft area, which would include the pipeline corridor, would be cleared for the proposed lift station. Up to 0.5 acre of xeric hardwood forest would be cleared to build the Camp Rudder Line.

1.1.2 Eglin Main Line

Two alternatives were carried forward for detailed analysis for construction of the Eglin Main Line: the Preferred Alternative and Alternative A (Figure 1-3). The routes of the two alternatives coincide west of Garnier Creek and south of the intersection of General Robert M. Bond Boulevard and State (SR) Route 85, but differ between Garnier Creek and this intersection.

Under both alternatives, an up to 24-inch-diameter pipeline would be constructed along the Eglin Main Line route and wastewater would be pumped through this line to connect with existing pipelines that would convey the wastewater to the APWRF. The lift stations that would push the wastewater through the Eglin Main Line would be constructed on the Plew STP line and are described in Section 1.1.3. The proposed Eglin Main Line would originate at the intersection of RR 236 and RR 636, which would be the connection point to the 7SFG Force Main. The final pipeline size would be determined during the design phase but would not exceed 24 inches. The route extends eastward through the middle of the Eglin AFB electric transmission ROW. The route continues eastward within the transmission ROW until intersecting a Gulf Power electric transmission ROW east of Garnier Creek. The pipeline would be buried along the route. The pipeline would stay within the established ROW for this portion of the route and no tree clearing would result. This portion of the route crosses two perennial streams and associated fringing wetlands (Garnier Creek and an unnamed tributary of Garnier Creek), which would be crossed without impact by directional bore beneath the stream.

At the intersection of General Robert M. Bond Boulevard and SR 85, two alternatives converge and the route would turn South and new 20-inch diameter pipe would be placed



- Proposed Main Line
- Existing Wastewater Line
- Alternative A
- Preferred Alternative
- Lift Station Vicinity

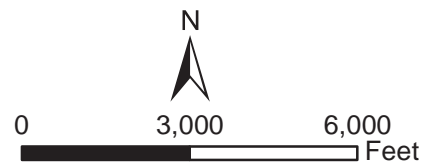


Figure 1-3
Proposed Eglin Main Line and Lift Stations
Eglin Air Force Base

parallel and to the west of SR 85 to a point opposite the proposed new lift station (approximately 0.4 miles). The route along SR 85 would require clearing of approximately 15 ft of longleaf pine forest to the west of SR 85 because the existing ROW has too many existing underground utilities to accommodate a new pipeline. Up to 2.9 acres of longleaf pine forest would be cleared. Directional bore crossings would be used to place the pipe beneath General Robert M. Bond Boulevard and SR 85 and the new line would tie in to the lift station. The existing line south of the lift station would be replaced with 16-inch diameter pipe for approximately 1.2 miles to connect with the existing 18-inch diameter line to the Plew STP just south of Eglin Boulevard. A directional bore crossing would be used to place the pipe beneath Eglin Boulevard.

The following sections describe the difference between the Preferred Alternative and Alternative A.

1.1.2.1 Preferred Alternative

The northern portion of the Preferred Alternative would follow the west side of the Gulf Power ROW south to General Robert M. Bond Boulevard. The Preferred Alternative would stay within previously cleared ROW to the extent practicable, but portions of the route would require clearing of up to an approximately 30-ft-wide by 200-ft-long area of mixed pine-hardwood forest along the west side of the ROW around each Gulf Power transmission tower guy wire anchor. Up to 2.9 acres of mixed pine-hardwood forest would be cleared. The Preferred Alternative route would then parallel the north or south side of General Robert M. Bond Boulevard in the existing cleared ROWs to SR 85, where it would reconnect with the southern common portion of the route.

If a route on the south side of the road is selected, a directional bore would be used to cross the road at each end.

1.1.2.2 Alternative A

From the Gulf Power ROW, Alternative A continues along the Eglin electric transmission ROW to the northwest corner of the Eglin AFB spray irrigation fields. At this point, the route departs from the ROW and follows the western edge and then the southern edge of the spray irrigation fields and would connect with new 20-inch diameter pipe that would follow the west side of SR 85 to General Robert M. Bond Boulevard where it would reconnect with the southern common portion of the route. Up to 0.3 acres of longleaf pine forest would be cleared to construct Alternative A.

1.1.3 Lift Stations

Two lift stations would be constructed along the existing Plew STP line (Figure 1-3). One lift station would be built in the vicinity of the Eglin Main WWTP south of Nomad Road and the other would be built in the vicinity of the Plew STP.

1.1.4 Fiber Optic Conduit

After the new pipelines are constructed and the trenches backfilled, fiber optic conduit would be plowed into the same disturbed area prior to final soil stabilization. Directional bore would be used to install the conduit beneath roads, streams, and wetlands to avoid impacts to these resources. The fiber optic conduits would be offset laterally by 5 ft and would be parallel to the wastewater pipelines. The conduits also would be installed at a

shallower depth than the pipelines. Fiber optic lines would not be installed as part of this action, but would be strung into the conduit through access ports at a later time, as needed, with no additional environmental disturbance.

Because other options to increase fiber optic capacity in these areas would require use of undisturbed land and result in greater disturbance, alternatives to placing the conduit in the area disturbed during construction of the new wastewater pipelines were not considered.

1.2 Alternatives Background

Eglin AFB and OCWS evaluated four alternatives for the Camp Rudder Line and three alternatives for the Eglin Main Line. These alternatives are described more fully in Sections 2.3 and 2.4 and are summarized here.

Selection criteria used to identify and evaluate alternatives included estimated cost; disruptions to traffic, housing, and other Eglin AFB activities; the potential impacts on environmental resources (e.g., forests, streams, wetlands, rare or protected species); the presence of historical or cultural resources; and the amount of land disturbance required. The alternatives evaluated against the selection criteria included:

- Camp Rudder Line Alternative 1 – This alternative is part of the Proposed Action described above and in Section 2.4.1.
- Camp Rudder Line Alternative 2 – This alternative is similar to Camp Rudder Line Alternative 1. Camp Rudder Line Alternative 2 extends from the WWTP at Camp Rudder along the unpaved service road for the WWTP to the pool area. At the pool area, the route follows an unpaved RR and existing Eglin AFB electric transmission ROW south-southwest until the unpaved RR intersects with RR 257. After reaching RR 257, this alternative follows the same route as Camp Rudder Line Alternative 1. This alternative was eliminated from further consideration because it would have the same environmental impacts as Alternative 1 but would potentially impact a sensitive cultural resource area that Alternative 1 would avoid, and it would be more costly to construct due to higher access and equipment operation costs associated with the extended separation from paved roads
- Camp Rudder Line Alternative 3 – This alternative would parallel an unpaved service road, Overlord Drive, RR 600W, RR 600E, RR 236, and RR 213. It was eliminated from further consideration primarily because (1) the portion along Overlord Drive would pass through the Camp Rudder residential area, which would be a disruption to families living there and would create a safety risk for children during construction, and (2) construction costs would be higher than those of Alternative 1 due to technical issues associated with equipment access and construction in steephead valleys, as well as the potential need for additional infrastructure (pumps, lift station, or bridge) to convey wastewater across the eastern stream crossing and other elevation changes. Steephead valleys form in sandy or clayey soils and generally occur when seepage erosion begins at the valley floor, travelling up and forming a deep valley with a unique habitat along the valley floor (Florida Natural Areas Inventory, 2010). In addition, areas along the route within RR 600 contain protected habitat for endangered species.

- Camp Rudder Line Alternative 4 – This alternative would parallel an unpaved service road, an unpaved RR, an Eglin AFB electric transmission ROW, RR 257, RR 688, RR 236, and RR 213. It was eliminated from further consideration primarily because environmental impacts would be comparable to those of Alternative 1 but construction costs would be higher due to technical issues associated with equipment access and construction in steephead valleys, as well as the potential need for additional infrastructure (pumps, lift station, or bridges) to convey wastewater across the stream crossings. There would also be a greater potential for future soil erosion due to the topography of the steephead valleys.
- Eglin Main Preferred Alternative - This alternative is part of the Proposed Action described above and in Section 2.4.2.
- Eglin Main Line Alternative A - This alternative is part of the Proposed Action described above and in Section 2.4.2.
- Eglin Main Line Alternative B – This alternative would originate at the intersection of RR 236 and RR 636 and then follow RR 236, Lewis Turner Boulevard, and General Robert M. Bond Boulevard. This alternative was eliminated from further consideration because it would have greater environmental impacts than either of the other considered alternatives with regard to forest clearing and wetland impacts, and because of potential conflicts with existing buried utilities.

1.3 Purpose and Need for Proposed Action

The Proposed Action is part of an effort to privatize wastewater collection and treatment on Eglin AFB. The base currently operates its own WWTPs and disposes of the wastewater effluent and sludge to designated spray irrigation fields and a land application site. Privatizing wastewater collection and treatment and leasing the spray irrigation fields would reduce the cost to the United States Air Force (USAF) for operation and maintenance (O&M) of facilities on a life cycle analysis basis and would result in more efficient wastewater treatment. The *Eglin AFB Wastewater Treatment Alternatives* report determined that Eglin AFB would save approximately \$2 million to \$4 million in average annual costs by sending wastewater from the Eglin Main Line, the Camp Rudder Line, and the Duke Field Area to the OCWS facility (CH2M HILL, 2010a). The Duke Field area is not included in the Proposed Action, as it was addressed separately, but the annual savings to Eglin AFB still would be substantial. Upon completion of the pipelines, Eglin AFB would cease operation of its WWTPs and transfer wastewater to the APWRF, a new state-of-the-art facility constructed by OCWS on Eglin AFB south of the intersection of RRs 234 and 636, about 5 miles west of Eglin main base.

Existing fiber optic infrastructure is inadequate to meet current needs. The fiber optic component of the Proposed Action would increase fiber optic capacity to the areas served by the new wastewater pipelines. Increased fiber optic capacity would enhance telecommunications and the ability to meet the military mission.

1.4 Location of the Proposed Action

The location of the Proposed Action is within Eglin AFB near the Eglin main base cantonment area and near Camp Rudder. The Eglin main base cantonment area is located adjacent to Valparaiso and Niceville, Florida and approximately 4 miles from Fort Walton Beach in the Florida Panhandle. Camp Rudder is located approximately 15 miles northeast of the Eglin main base cantonment area (Figure 1-1).

1.5 Scope of the Environmental Assessment

This document was prepared in accordance with the requirements of the National Environmental Policy Act of 1969 (NEPA), the Council on Environmental Quality (CEQ) regulations, and 32 Code of Federal Regulations (CFR) Part 989, which defines the USAF environmental impact analysis process.

On December 26, 2011 a Public Notice was published in the Northwest Florida Daily News announcing that this document would be available for a 15-day public review. A second NOA was published in the Northwest Florida Daily News on April 9, 2012, announcing a second public review period that ended April 27, 2012. No comments were received during this period.

The EA was submitted to the Florida Department of Environmental Protection (FDEP) Florida State Clearinghouse for a 60-day agency review that ended on February 26, 2012. Comments received from the Clearinghouse are provided in Appendix A and were given consideration in the EA.

1.6 Applicable Regulatory Requirements and Coordination

The following regulatory requirements and coordination are applicable to one or more components of the alternative actions described in this Environmental Assessment (EA):

- NEPA and implementing regulations in Title 40 CFR, Parts 1500-1508 (40 CFR 1500-1508)
- The National Historic Preservation Act (NHPA) of 1966 (16 U.S. Code [USC] 470 et seq., as amended) and implementing regulations in Title 36 CFR, Part 800 (36 CFR 800)
- 32 CFR 989, Air Force Environmental Impact Analysis Process
- The Endangered Species Act (ESA) of 1973 (16 USC 1531-1543)
- The Fish and Wildlife Coordination Act (16 USC 661, et seq.)
- The Migratory Bird Treaty Act (16 USC 701, et seq.)
- The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (as amended by the Superfund Amendments and Reauthorization Act of 1986)
- The Resource Conservation and Recovery Act of 1976
- The Protection of Historic Properties Act
- The Archeological Resources Protection Act of 1979

- The Clean Water Act of 1977 (CWA) and the Water Quality Act of 1987 (33 USC 1251 et seq., as amended)
- The Coastal Zone Management Act of 1972 (16 USC 1451-1464), as amended through Public Law (PL) 93-612, PL 94-370, PL 95-372, PL 96-464, PL 99-272, PL 99-626, PL 101-508, PL 102-587 title II, 2205(b)(2), PL 104-150, PL 105-383, and PL 108-456
- The Clean Air Act (CAA) (42 USC 7401 et seq., as amended)
- The Noise Control Act of 1972
- Executive Order (EO) 11514, Protection and Enhancement of Environmental Quality (amended by EO 11991)
- EO 13186, Responsibilities of Federal Agencies to Protect Migratory Birds
- EO 11990, Protection of Wetlands
- EO 11988, Floodplain Management
- EO 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations
- EO 13045, Protection of Children from Environmental Health Risks and Safety Risk
- EO 13423, Strengthening Federal Environment, Energy and Transportation Management
- EO 12372, Intergovernmental Review of Federal Programs
- EO on 13514, Federal Leadership in Environmental, Energy and Economic Performance
- Air Force Instruction (AFI) 91-302, Air Force Occupational and Environmental Safety, Fire Protection and Health Standards
- AFI 32-7040, Air Quality Compliance and Resource Management
- AFI 32-7041, Water Quality Compliance
- AFI 32-7042, Waste Management
- AFI 32-7064, Integrated Natural Resources Management
- Florida Administrative Code (FAC) 62-604, Collection Systems and Transmission Facilities
- FAC 62-621, Generic Permits
- FAC 62-343, Environmental Resource Permits

1.7 Document Organization

This EA follows the organization established by the CEQ regulations (40 CFR, Parts 1500-1508). This document includes the following sections:

- 1.0 Introduction
- 2.0 Description of Proposed Action and Alternatives
- 3.0 Affected Environment

4.0 Environmental Consequences

5.0 List of Preparers

6.0 List of Contacts

7.0 References

Appendices

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2.0 Description of Proposed Action and Alternatives

2.1 Alternative Development

NEPA requires that the Proposed Action, No Action Alternative, and any other reasonable alternatives be considered in the analysis. In developing this project, Eglin AFB and OCWS considered land use impacts, environmental impacts, cost, and the feasibility of construction. The Proposed Action is primarily to convey Eglin AFB wastewater to the OCWS APWRF, which is located on Air Force property north of Fort Walton Beach. The Proposed Action consists of the following components:

1. Construction of a new wastewater pipeline to connect the Camp Rudder area with the 7SFG Force Main, which leads to the APWRF.
2. Construction of a new wastewater pipeline to connect the Eglin main base cantonment area with the existing effluent line, which is being converted to a raw sewage line that would lead to the APWRF. Replace approximately 1.6 miles of existing pipe with stronger-walled pipe sufficient for operation of a force main.
3. Construction of three new lift stations: one at the northern end of the proposed Camp Rudder wastewater line, and two inside the fence of Eglin main base to pump to the Plew STP line.
4. Installation of fiber optic conduit parallel to the wastewater pipelines within the same construction corridor at a shallower depth than the wastewater pipelines and offset by 5 ft laterally.

Section 2.3 describes alternatives that were initially considered and determined to be impractical or unfeasible. The reasons for eliminating these alternatives from further consideration are provided in Section 2.3. Section 2.4 describes the Proposed Action, including two alternatives for constructing the pipeline to serve the cantonment area. The discussion of alternatives is separated into alternatives carried forward for detailed analysis in the EA and alternatives eliminated from further consideration as impractical or unfeasible. The No Action Alternative is described in Section 2.6 and was also considered in detail.

2.2 Environmental Justice and Protection of Children

EO 12898, Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, requires that federal agencies address the environmental concerns of minorities and low-income communities that may be impacted by implementation of federal actions. This EO was issued to ensure that no minority or low-income population is disproportionately impacted by federal actions.

The project would be constructed and operated on land owned by Eglin AFB and there are no low-income or minority populations within the proposed project area. Construction and operation impacts would be limited to the proposed site. This EA concludes that no disproportionately high and adverse human health or environmental effects would occur to low-income or minority populations. All activities would be confined to uninhabited areas on Eglin AFB and generally within or adjacent to existing maintained utility or transportation corridors. No private housing occurs along any of the considered routes. The Proposed Action would not have an adverse impact on service to Okaloosa County residents, as the Okaloosa County wastewater system has the capacity to accommodate the additional loading from Eglin AFB.

EO 12898 also requires equal consideration for Native American concerns. Eglin AFB fully addresses concerns of Native American tribes through its compliance with The Native American Graves and Repatriation Act of 1990 and the American Indian Religious Freedom Act.

EO 13045, Protection of Children from Environmental Health Risks and Safety Risk, requires federal agencies to identify and assess environmental health risks and safety risks that may disproportionately affect children and ensure that their policies, programs, activities, and standards address identified disproportionate risks to children that result from environmental health risks or safety risks. No children live along the considered routes and the route selection process eliminated an alternative that would have passed through an on-base housing area. Implementation of the Proposed Action would not create any environmental health or safety risks for children.

2.3 Alternatives Considered but Not Carried Forward

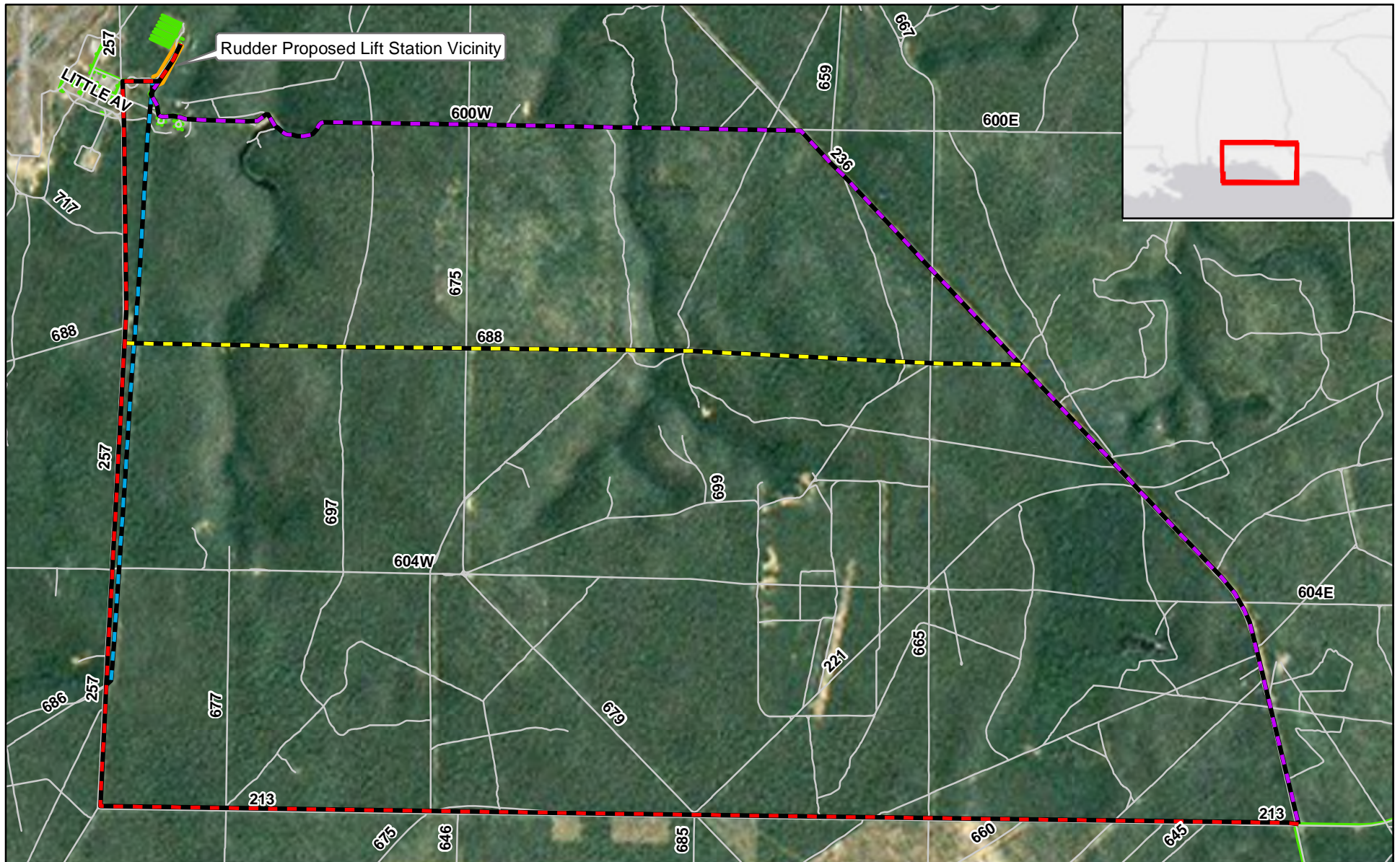
2.3.1 Camp Rudder Line

The Camp Rudder Line would consist of an up to 8-inch-diameter pipeline that would originate at the Camp Rudder WWTP and connect with the 7SFG Force Main. The final pipe size would be determined during the design phase but would not exceed 8 inches in diameter. Four alternatives were considered for the Camp Rudder Line (Figure 2-1).

Alternative 1 was carried forward for detailed analysis and is described in Section 2.4.1. Alternatives 2, 3, and 4 are described below, along with the reasons they were eliminated from further consideration.

2.3.1.1 Camp Rudder Line Alternative 2

Camp Rudder Line Alternative 2 extends from the WWTP at Camp Rudder along the unpaved service road for the WWTP to the pool area. At the pool area, the route follows an unpaved RR and existing Eglin AFB electric transmission ROW south-southwest until the unpaved RR intersects with RR 257. The route then follows the east side of RR 257 until reaching RR 213, where it then extends east along the north side of RR 213 to the point where the line would be connected to the existing 7SFG Force Main at RR 236. A new lift station would be built between the pool area and the Camp Rudder WWTP to push wastewater through the system. After the point where the Alternative 2 route reaches RR 257, this alternative follows the same route as Alternative 1. Up to a 15-ft-wide strip of forest would be cleared along the roads under this alternative.



- Alternative 1
- Alternative 2
- Alternative 3
- Alternative 4
- Existing Wastewater Line

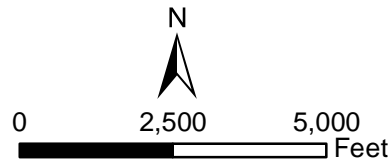


Figure 2-1
Camp Rudder Line Proposed Action and Alternatives
Eglin Air Force Base

Camp Rudder Line Alternative 2 was eliminated from further consideration because it would have the same environmental impacts as Alternative 1, including a loss of up to 14.7 acres of foraging habitat for the RCW, but would potentially impact a sensitive cultural resource area that Alternative 1 would avoid, and it would be more costly to construct due to higher access and equipment operation costs associated with the extended separation from paved roads.

2.3.1.2 Camp Rudder Line Alternative 3

The Camp Rudder Line Alternative 3 extends from the WWTP at Camp Rudder along the unpaved service road for the WWTP to the pool area. At the pool area, the route follows Overlord Drive to RR 600W. The line would be placed adjacent to the road from the point where the route starts on Overlord Drive, along RR 600W and RR 600E to the intersection with RR 236. The route follows the east side of RR 236 south to RR 213, where the line would be connected to the existing 7SFG Force Main.

Forest clearing, which would involve a mix of xeric hardwood forest and longleaf pine forest, would be required along RR 600W, RR 600E, and RR 236. Up to a 15-ft-wide strip of forest would be cleared along one side of RR 600W and RR 600E and along the east side of RR 236 from RR 600E to RR 236. Forest clearing would be comparable to that for Alternative 1, including loss of potential RCW foraging habitat where longleaf pine forest would be cleared. This alternative would require an extended directional bore beneath an existing impoundment on Metts Creek along RR 600W. In addition, there would be a directional bore crossing of Malone Creek and an associated bottomland hardwood forested wetland along RR 600E.

Camp Rudder Line Alternative 3 was eliminated from further consideration primarily because (1) the portion along Overlord Drive would pass through the Camp Rudder residential area, which would be a disruption to families living there and would create a safety risk for children during construction, and (2) construction costs would be higher than those of Alternative 1 due to technical issues associated with equipment access and construction in steephead valleys, as well as the potential need for additional infrastructure (pumps, lift station, or bridge) to convey wastewater across the eastern stream crossing and other elevation changes. In addition, areas along the route within RR 600 contain protected habitat for endangered species.

2.3.1.3 Camp Rudder Line Alternative 4

Camp Rudder Line Alternative 4 extends from the WWTP at Camp Rudder along the unpaved service road for the WWTP to the pool area. At the pool area, the route follows an unpaved RR and existing Eglin AFB electric transmission ROW south-southwest until the unpaved RR intersects with RR 257. The route then follows the east side of RR 257 until reaching RR 688. The wastewater pipeline would be placed beneath the center of RR 688 between RR 257 and RR 236, with the exception of the two stream crossings where the pipeline would be installed by directional bore along a straight path. After crossing beneath RR 236 by directional bore, the route would follow the east side of RR 236 south to RR 213, where the line would be connected to the existing 7SFG Force Main.

Forest clearing, which would include a mix of xeric hardwood forest and longleaf pine forest, would be required along the portion of the route paralleling RR 257 from the Camp

Rudder fence to RR 688, RR 688, and the portion paralleling RR 236. Up to a 15-ft-wide strip of forest would be cleared along each of these sections and the amount would be comparable to that cleared under Alternative 1, including loss of potential RCW foraging habitat where longleaf pine forest would be cleared. This alternative would require directional bore crossings beneath Metts Creek and Malone Creek, and bottomland hardwood forested wetlands associated with each stream, along RR 688. Alternative 4 would have greater construction costs due to technical issues associated with equipment access and construction in steephead valleys along a portion of the route and there would be a greater risk of soil erosion following construction.

Camp Rudder Line Alternative 4 was eliminated from further consideration because environmental impacts would be comparable to those of Alternative 1 but construction costs would be higher due to technical issues associated with equipment access and construction in steephead valleys, as well as the potential need for additional infrastructure (pumps, lift station, or bridges) to convey wastewater across the stream crossings. There would also be a greater potential for future soil erosion due to the topography of the steephead valleys.

2.3.2 Eglin Main Line

Three alternatives were considered for the Eglin Main Line (Figure 2-2). The Preferred Alternative and Alternative A were considered feasible and were carried forward for detailed analysis. The Preferred Alternative and Alternative A are described in Sections 2.4.2.2 and 2.4.2.3, respectively. A third alternative, Alternative B, also was considered for the Eglin Main Line and is described below.

Alternative B would originate at the intersection of RR 236 and RR 636, which would be the connection point to the 7SFG Force Main. The route would extend south along the east side of RR 236 to Lewis Turner Boulevard. The route would follow the north side of Lewis Turner Boulevard to General Robert M. Bond Boulevard. The route would then parallel the north side of General Robert M. Bond Boulevard to the northeast to connect with the Plew STP line at SR 85. Alternative B would include a directional bore under SR 85 to reach the tie-in with the Plew STP line on the east side of the road.

An approximately 15-ft-wide strip of regenerating mixed pine-hardwood forest would be cleared along the east side of RR 236 until a point near the intersection with Lewis Turner Boulevard. The southern portion of the route along RR 236 and the western portion of the route along Lewis Turner Boulevard would require clearing of an approximately 15-ft-wide strip of longleaf pine forest. Along either side of Garnier Creek, this route would require clearing of up to a 15-ft-wide strip through approximately 1,700 linear ft of bottomland hardwood forested wetlands or placing the line beneath these wetlands with directional bore and adding an additional lift station. Along General Robert M. Bond Boulevard, Alternative B would require clearing of up to 15 ft of longleaf pine forest between the Gulf Power ROW and SR 85. The existing ROW along General Robert M. Bond Boulevard contains too many existing underground utilities to accommodate a new pipeline.

This alternative was eliminated from further consideration because it would have greater environmental impacts than either of the other considered alternatives with regard to forest clearing and wetland impacts, and because of potential conflicts with existing buried utilities.

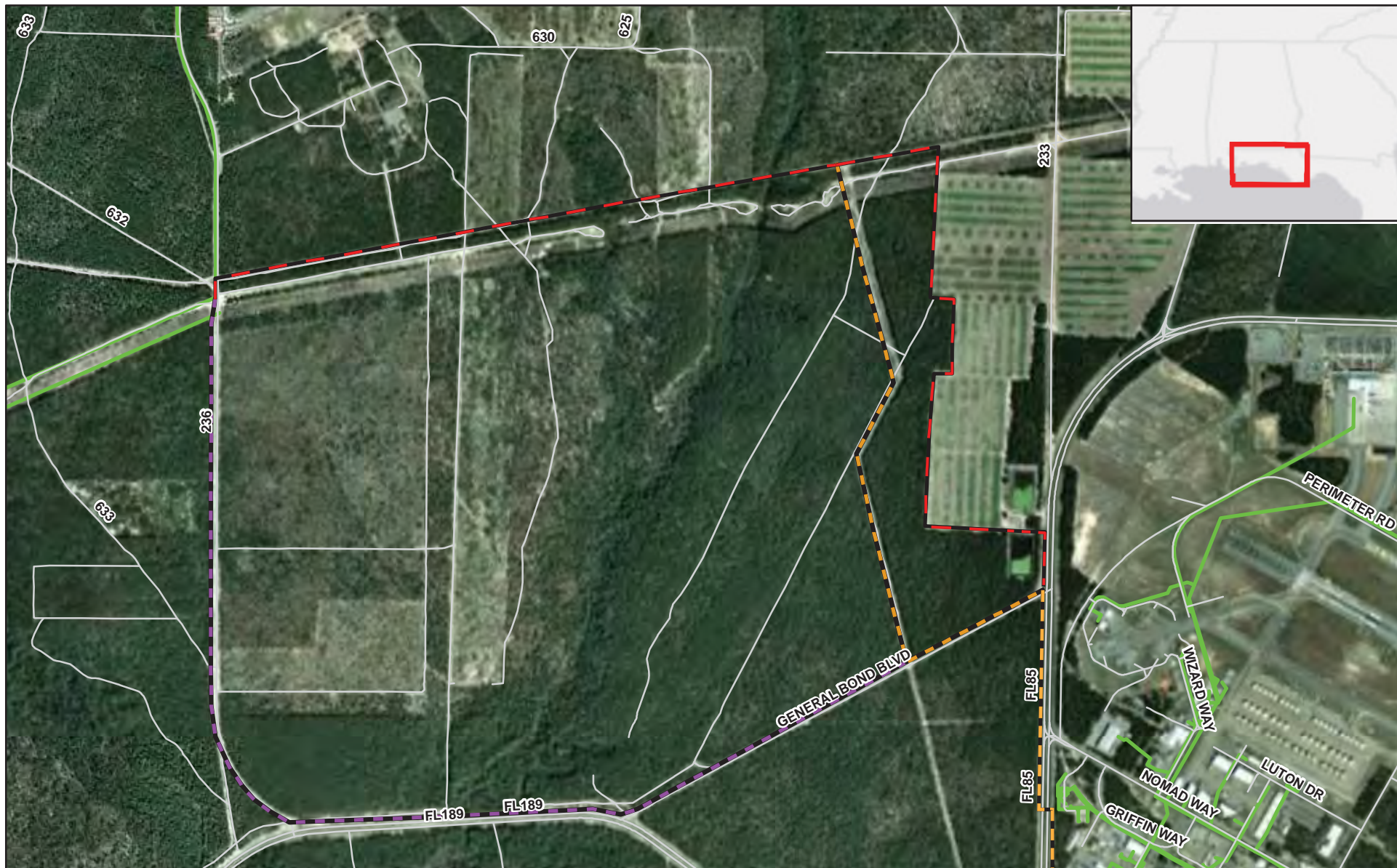


Figure 2-2
Eglin Main Line Proposed Action and Alternatives
Eglin Air Force Base

2.4 Preferred Alternative

2.4.1 Camp Rudder Line Alternative 1

Camp Rudder Line Alternative 1 would originate at the intersection of RR 236 and RR 213, where the new line would connect with the 7SFG Force Main. From the connection point, the route would follow the north side of RR 213 to its intersection with RR 257. From this point, the route would follow the east side of RR 257 to the Camp Rudder fence. Inside the fence, the route would remain on the east side of RR 257 and continue east toward the pool area. From the pool area, the route would follow the unpaved service road to the Camp Rudder WWTP. A new lift station would be built between the pool area and the Camp Rudder WWTP.

Where the route parallels RR 213 and RR 257, the wastewater pipeline would be placed outside the existing cleared ROW. This would require clearing up to 15 ft of longleaf pine forest along these roads for a distance of approximately 8 miles. For approximately 700 ft along the north side of RR 213, the route would be relocated south away from longleaf pine forest and into the existing cleared ROW on either the north or south side of the road to avoid impacts to RCW habitat. This portion of the line would be constructed by trenching in the cleared ROW, if the location of existing buried utility lines allows or by directional bore underneath existing lines. If a route on the south side of the road is selected, a directional bore would be used to cross the road at each end.

No clearing would be required through Camp Rudder until the section between the pool area and the WWTP, where it would be necessary to clear xeric hardwood forest adjoining the service road. Up to a 15-ft-wide corridor would be cleared through xeric hardwood forest for a distance of approximately 0.2 mile. In addition, a 100-ft by 100-ft area of this xeric hardwood forest, which would include the 15-ft pipeline corridor, would be cleared for the proposed lift station. Up to 0.5 acre of xeric hardwood forest would be cleared to build the Camp Rudder Line.

The north side of RR 213 was selected to minimize conflict with existing buried utilities on the south side of the road and to minimize the number of road crossings. The east side of RR 257 was selected to avoid a potential cultural resource site on the west side of RR 258 and to minimize road crossings, as the Camp Rudder WWTP is east of RR 257.

2.4.2 Eglin Main Line

An up to 24-inch-diameter pipeline would be constructed along the Eglin Main Line route and wastewater would be pumped through this line to connect with existing pipelines that would convey the wastewater to the APWRF. The lift stations that would push the wastewater through the Eglin Main Line would be constructed on the Plew STP line and are described in Section 2.4.3. The final pipeline size would be determined during the design phase but would not exceed 24 inches. Two alternatives were carried forward for detailed analysis for construction of the Eglin Main Line: The Preferred Alternative and Alternative A. The two alternatives coincide west of Garnier Creek and south of the intersection of General Robert M. Bond Boulevard and SR Route 85, but differ between Garnier Creek and this intersection. The following sections describe the common portions of the route and then the two alternatives for the eastern part of the Eglin Main Line route.

2.4.2.1 Eglin Main Line Alternative Common Route

The Eglin Main Line would originate at the intersection of RR 236 and RR 636, which would be the connection point to the 7SFG Force Main. The route would extend eastward down the middle of the Eglin AFB electric transmission ROW. The route would then continue eastward within the transmission ROW until intersecting a Gulf Power electric transmission ROW east of Garnier Creek. The pipeline would stay within the established ROW for this portion of the route and no tree clearing would result. This portion of the route crosses two perennial streams with fringing wetlands (Garnier Creek and an unnamed tributary of Garnier Creek), which would be crossed without impact by directional bore beneath the stream.

At the intersection of General Robert M. Bond Boulevard and SR 85, the alternatives converge and the route would turn South and new 20-inch diameter pipe would be placed parallel and to the west of SR 85 to a point opposite the proposed new lift station (approximately 0.4 miles). Directional bore crossings would be used to place the pipe beneath General Robert M. Bond Boulevard and SR 85 and the new line would tie in to the lift station. The existing line south of the lift station would be replaced with 16-inch diameter pipe for approximately 1.2 miles to connect with the existing 18-inch diameter line to the Plew STP just south of Eglin Boulevard. A directional bore crossing would be used to place the pipe beneath Eglin Boulevard.

The route along SR 85 would require clearing of approximately 15 ft of longleaf pine forest to the west of SR 85 because the existing ROW has too many existing underground utilities to accommodate a new pipeline. Up to 2.9 acres of longleaf pine forest would be cleared.

2.4.2.2 Preferred Alternative

The northern portion of the Preferred Alternative would follow the west side of the Gulf Power ROW south to General Robert M. Bond Boulevard. The Preferred Alternative would stay within previously cleared ROW to the extent practicable, but portions of the route would require clearing of up to an approximately 30-ft-wide by 200-ft-long area of mixed pine-hardwood forest along the west side of the ROW around each Gulf Power transmission tower guy wire anchor. Up to 2.9 acres of mixed pine-hardwood forest would be cleared.

There are two possible options for the southern part of the Preferred Alternative:

- Preferred Alternative 1- Follow the north side of General Robert M. Bond Boulevard to connect with the common portion of the route at SR 85.
- Preferred Alternative 2 - Follow the south side of General Robert M. Bond Boulevard to connect with the common portion of the route at SR 85. Preferred Alternative 2 would include a directional bore crossing to reach the south side of General Robert M. Bond Boulevard, but would not have a directional bore crossing at SR 85.

2.4.2.3 Alternative A

Alternative A continues along the Eglin electric transmission ROW to the northwest corner of the Eglin AFB spray irrigation fields. At this point, the route departs from the ROW and would connect with new 20-inch diameter pipe that would follow the west side of SR 85 to General Robert M. Bond Boulevard where it would reconnect with the southern common

portion of the route. Up to 0.3 acres of longleaf pine forest would be cleared to construct Alternative A.

2.4.3 Lift Stations along Plew STP Line

It would be necessary to construct two new lift stations along the Plew STP line (Figure 1-3). The locations of the two lift stations were selected based on how best to maintain flow through the pipes (i.e., topography, including the crossing of Garnier Creek and its tributary, and physics). One lift station would be built in the vicinity of the Eglin Main WWTP south of Nomad Road and the other would be built in the vicinity of the Plew STP. Alternative locations for the lift stations are not technically feasible. Construction of the lift stations would result in disturbance of up to an approximately 100-ft by 100-ft area and also would include additional piping to support the lift stations.

2.4.4 Fiber Optic Conduit

Fiber optic conduits would potentially be placed parallel to the new wastewater pipelines, and offset laterally by 5 ft. In addition to the lateral offset of 5 ft, the fiber optic conduit would be plowed in at a shallower depth than the pipelines. Because the conduit would be above the pipelines, the risk of accidental damage to the pipelines from excavation to expose the conduit for maintenance in future years would be minimized. After the new pipelines are constructed and the trenches backfilled, fiber optic conduit would be plowed into the same disturbed area prior to final soil stabilization. The fiber optic lines would be strung into the conduit at a later time with no additional environmental disturbance.

Because other options to increase fiber optic capacity in these areas would require use of undisturbed land and result in greater disturbance, alternatives to plowing the conduit into the disturbed area above the new wastewater pipelines were not considered.

2.5 Construction Methods

2.5.1 Wastewater Pipelines

Wastewater pipelines would be constructed by trenching with a trackhoe or similar equipment. The pipe would be placed on a sand bed, primarily consisting of native materials and the trench backfilled, with the upper 6 inches of soil returned to the surface of the backfilled trench. All road crossings and jurisdictional waters would be directionally bored. Depending on the usability of existing cleared ROW, up to 15 ft of land would be cleared adjacent to the existing ROW to accommodate the new pipelines.

Between the time of construction of the wastewater pipelines and plowing in the fiber optic conduits, appropriate temporary soil stabilization measures would be implemented.

2.5.2 Fiber Optic Conduit

Following construction of the wastewater pipelines, fiber optic conduit would be plowed into the ground parallel to the new pipelines and offset 5 ft laterally. In addition to the lateral offset of 5 ft, the fiber optic conduit would be installed at a shallower depth than the pipelines. This would be done in approximately 2-mile segments, as the wastewater pipelines are constructed. Most of the fiber optic conduit would be plowed into the previously disturbed area prior to final soil stabilization. To minimize environmental

impacts and potential traffic disruption, all road crossings and jurisdictional waters would be directionally bored to install the fiber optic conduit. The fiber optic lines would be strung into the conduit at a later date between access points that would be 1,000 to 2,000 ft apart, with no additional soil or vegetation disturbance.

After installation of the fiber optic conduits, final soil stabilization and revegetation would be done.

2.6 No Action Alternative

Under the No Action Alternative, Eglin AFB would continue to provide wastewater collection and treatment to the Camp Rudder area and to the cantonment area using existing facilities. System capacity would not be increased and the existing system that requires high maintenance efforts and uses older, less effective technologies would remain in use.

2.7 Comparison of Alternatives

The impacts of the Proposed Action, alternatives that were considered in detail, and the No Action Alternative are compared in Table 2-1.

TABLE 2-1

Comparison of Impacts of Considered Alternatives

Wastewater Pipelines Environmental Assessment, Eglin AFB, Florida

Resource Area	Camp Rudder Line Alternative 1	Eglin Main Preferred Alternative	Eglin Main Alternative A	Lift Stations on Plew STP Line	No Action Alternative
Climate	Negligible Impacts	Negligible Impacts	Negligible Impacts	Negligible Impacts	No Impacts
Climate Change	Negligible Impacts	Negligible Impacts	Negligible Impacts	Negligible Impacts	No Impacts
Geology	No Impacts	No Impacts	No Impacts	No Impacts	No Impacts
Topography	No Impacts	No Impacts	No Impacts	No Impacts	No Impacts
Soils	Temporary soil disturbance in construction footprint; disturbed soils would be covered by lift station or stabilized if outside of lift station footprint.	Temporary soil disturbance in construction footprint; disturbed soils would be covered by lift station or stabilized if outside of lift station footprint.	Temporary soil disturbance in construction footprint; disturbed soils would be covered by lift station or stabilized if outside of lift station footprint.	Temporary soil disturbance in construction footprint; disturbed soils would be covered by lift station or stabilized if outside of lift station footprint.	No Impacts
Noise	Temporary minor construction-related noise. No construction near residences—exposure would be temporary.	Temporary minor construction-related noise. No construction near residences—exposure would be temporary.	Temporary minor construction-related noise. No construction near residences—exposure would be temporary.	Temporary minor construction-related noise. No construction near residences—exposure would be temporary.	No Impacts

TABLE 2-1

Comparison of Impacts of Considered Alternatives

Wastewater Pipelines Environmental Assessment, Eglin AFB, Florida

Resource Area	Camp Rudder Line Alternative 1	Eglin Main Preferred Alternative	Eglin Main Alternative A	Lift Stations on Plew STP Line	No Action Alternative
Air Quality	Temporary fugitive dust from construction; use of best management practices (BMPs) would minimize offsite transport of fugitive dust. Temporary emissions from construction equipment; the construction period would be of short duration and exhaust from equipment would be minor compared to the surrounding traffic conditions.	Temporary fugitive dust from construction; use of BMPs would minimize offsite transport of fugitive dust. Temporary emissions from construction equipment; the construction period would be of short duration and exhaust from equipment would be minor compared to the surrounding traffic conditions.	Temporary fugitive dust from construction; use of BMPs would minimize offsite transport of fugitive dust. Temporary emissions from construction equipment; the construction period would be of short duration and exhaust from equipment would be minor compared to the surrounding traffic conditions.	Temporary fugitive dust from construction; use of BMPs would minimize offsite transport of fugitive dust. Temporary emissions from construction equipment; the construction period would be of short duration and exhaust from equipment would be minor compared to the surrounding traffic conditions.	No Impacts
Groundwater	No Impacts	No Impacts.	No Impacts	No Impacts	No Impacts
Surface Water	Potential temporary minor impacts from stormwater; use of appropriate BMPs would eliminate these impacts.	Potential temporary minor impacts from stormwater; use of appropriate BMPs and implementation of Frac-Out Plan would eliminate or minimize these impacts.	Potential temporary minor impacts from stormwater; use of appropriate BMPs and implementation of Frac-Out Plan would eliminate or minimize these impacts.	Potential temporary minor impacts from stormwater; use of appropriate BMPs would eliminate these impacts.	No Impacts
Wetlands	No Impacts Use of appropriate BMPs would eliminate or minimize potential for accidental impacts.	No impacts. Use of appropriate BMPs and implementation of Frac-Out Plan would eliminate or minimize potential for accidental impacts.	No impacts. Use of appropriate BMPs and implementation of Frac-Out Plan would eliminate or minimize potential for accidental impacts.	No Impacts Use of appropriate BMPs would eliminate or minimize potential for accidental impacts.	No Impacts

TABLE 2-1

Comparison of Impacts of Considered Alternatives

Wastewater Pipelines Environmental Assessment, Eglin AFB, Florida

Resource Area	Camp Rudder Line Alternative 1	Eglin Main Preferred Alternative	Eglin Main Alternative A	Lift Stations on Plew STP Line	No Action Alternative
Hazardous and Toxic Substances	An unexploded ordnance (UXO) survey conducted by one or more active duty Explosive Ordnance Disposal (EOD) Specialists or UXO qualified personnel will be required prior to any ground intrusive activity. This survey will be utilized by the Air Armament Center Safety Element Weapons (AAC/SEW) to determine the explosive safety requirements and procedures that will be implemented to protect personnel and property during construction. No impacts would occur except in the unlikely event that UXO is identified during the survey. The UXO would be properly disposed of by a qualified UXO specialist prior to construction.	No Impacts	No Impacts	No Impacts	No Impacts
Traffic	Potential for minor temporary delays in on-base traffic during construction; no impacts on civilian or commercial traffic outside Eglin AFB.	Potential for minor temporary delays in on-base traffic; potential for minor temporary delays in military, civilian, and commercial traffic along General Robert M. Bond Boulevard during construction; no other impacts on civilian or commercial traffic outside Eglin AFB.	Potential for minor temporary delays in on-base traffic during construction; no impacts on civilian or commercial traffic outside Eglin AFB.	Potential for minor temporary delays in project area on-base traffic during construction; no impacts on civilian or commercial traffic outside Eglin AFB.	No Impacts

TABLE 2-1

Comparison of Impacts of Considered Alternatives

Wastewater Pipelines Environmental Assessment, Eglin AFB, Florida

Resource Area	Camp Rudder Line Alternative 1	Eglin Main Preferred Alternative	Eglin Main Alternative A	Lift Stations on Plew STP Line	No Action Alternative
Cultural Resources	No impacts	No impacts	No impacts	No Impacts	No Impacts
Flood Hazard	No Impacts	No Impacts.	No Impacts	No Impacts	No Impacts
Visual Resources	Minor temporary change in appearance due to presence of construction equipment. Minor change in appearance of roadside due to wider cleared ROW.	Minor temporary change in appearance due to presence of construction equipment. Minor change in appearance of roadside due to wider cleared ROW.	Minor temporary change in appearance due to presence of construction equipment.	Minor temporary change in appearance due to presence of construction equipment. Negligible long-term change from presence of lift stations.	No Impacts
Aquatic Fauna and Flora	Minor potential for temporary indirect impacts from stormwater runoff; use of appropriate BMPs would eliminate or minimize these impacts. No long-term impacts.	Minor potential for temporary indirect impacts from stormwater runoff; use of appropriate BMPs and implementation of Frac-Out Plan would eliminate or minimize these impacts. No long-term impacts.	Minor potential for temporary indirect impacts from stormwater runoff; use of appropriate BMPs and implementation of Frac-Out Plan would eliminate or minimize these impacts. No long-term impacts.	No Impacts	No Impacts
Terrestrial Fauna and Flora	Temporary disturbance from construction. Loss of up to 14.7 acres of mature longleaf pine forest habitat and up to 0.5 acre of xeric hardwood forest. Animals would be displaced to surrounding similar habitat. Conversion of forest habitat to maintained grass may benefit grazing species.	Temporary disturbance from construction. Loss of approximately 2.9 acres of mixed pine-hardwood forest and 2.9 acres of longleaf pine forest. Animals would be displaced to surrounding similar habitat. Conversion of forest habitat to maintained grass may benefit grazing species.	Temporary disturbance from construction. Loss of approximately 2.9 acres of mixed pine-hardwood forest and 3.2 acres of longleaf pine forest. Animals would be displaced to surrounding similar habitat. Conversion of forest habitat to maintained grass may benefit grazing species.	Temporary disturbance from construction. Minor long-term impacts from limited clearing at project areas.	No Impacts

TABLE 2-1

Comparison of Impacts of Considered Alternatives

Wastewater Pipelines Environmental Assessment, Eglin AFB, Florida

Resource Area	Camp Rudder Line Alternative 1	Eglin Main Preferred Alternative	Eglin Main Alternative A	Lift Stations on Plew STP Line	No Action Alternative
Threatened and Endangered Species	<p>Loss of up to 14.7 acres of RCW foraging habitat. No work would occur in the 700-ft section of the Camp Rudder Line adjacent to RCW cavity trees from April through July, during the RCW nesting period.</p> <p>Potential to impact gopher tortoise and associated commensal species. Appropriate management practices would be implemented to minimize the potential for adverse impacts. Relocation of gopher tortoise or commensals would be coordinated with Eglin AFB Natural Resources Branch (NRB) staff and done only during appropriate warm weather periods.</p>	<p>Potential to impact gopher tortoise and associated commensal species. Appropriate management practices would be implemented to minimize the potential for adverse impacts. Relocation of gopher tortoise or commensals would be coordinated with Eglin AFB NRB staff and done only during appropriate warm weather periods.</p>	<p>Potential to impact gopher tortoise and associated commensal species. Appropriate management practices would be implemented to minimize the potential for adverse impacts. Relocation of gopher tortoise or commensals would be coordinated with Eglin AFB NRB staff and done only during appropriate warm weather periods.</p>	No Impacts	No Impacts
Socioeconomic Resources	<p>Minor short-term benefit from construction-related purchasing and secondary spending. No long-term impact to socioeconomic resources. Explosive safety requirements and procedures determined by AAC/SEW will be implemented to protect personnel and property during construction.</p>	<p>Minor short-term benefit from construction-related purchasing and secondary spending. No long-term impact to socioeconomic resources.</p>	<p>Minor short-term benefit from construction-related purchasing and secondary spending. No long-term impact to socioeconomic resources.</p>	<p>Negligible short-term benefit from construction-related purchasing and secondary spending. No long-term impact to socioeconomic resources.</p>	No Impacts

TABLE 2-1

Comparison of Impacts of Considered Alternatives

Wastewater Pipelines Environmental Assessment, Eglin AFB, Florida

Resource Area	Camp Rudder Line Alternative 1	Eglin Main Preferred Alternative	Eglin Main Alternative A	Lift Stations on Plew STP Line	No Action Alternative
Safety	No Impacts. A UXO survey conducted by active duty EOD Specialists or UXO qualified personnel will be required prior to any ground intrusive activity. This survey will be utilized by AAC/SEW to determine the explosive safety requirements and procedures that will be implemented to protect personnel and property during construction.	No Impacts	No Impacts	No Impacts	No Impacts

3.0 Affected Environment

3.1 Introduction

The environmental resources that could be affected by the Proposed Action are discussed in this section. The components of the affected environment discussed in this section include physical setting (climate, geology, topography, and soils), noise, air quality, groundwater, surface water, wetlands, hazardous and toxic substances, traffic, cultural resources, flood hazard, visual resources; biological resources (terrestrial flora and fauna, aquatic flora and fauna, and threatened and endangered [T&E] species); and socioeconomic resources.

3.2 Description of the Project Area

3.2.1 Physical Setting

3.2.1.1 Climate

The regional climate is humid and subtropical, characterized by abundant sunshine and rainfall, warm and humid summers, and mild winters. The average temperatures range from a maximum of 90 degrees Fahrenheit (°F) to a minimum near 42 °F. The annual rainfall averages approximately 62 inches, primarily in the summer and heaviest in July. Prevailing winds are usually from the north in the winter and from the south in the summer (Eglin AFB, 2010; CH2M HILL, 2006).

3.2.1.2 Climate Change

“Climate change” refers to any significant change in measures of climate (such as temperature, precipitation, or wind) lasting for an extended period (decades or longer). Climate change may result from any of the following conditions (U.S. Environmental Protection Agency [USEPA], 2010):

- Natural factors, such as changes in the sun's intensity or slow changes in the Earth's orbit around the sun
- Natural processes within the climate system (e.g., changes in ocean circulation)
- Human activities that change the atmosphere's composition (e.g., through burning fossil fuels) and the land surface (e.g. deforestation, reforestation, urbanization, and desertification)

Greenhouse gases (GHGs) are compounds that may contribute to accelerated climate change by altering the thermodynamic properties of the Earth's atmosphere. GHGs include the following pollutants (USEPA, 2010):

- Carbon dioxide (CO₂) is a naturally occurring gas produced by natural fires, geothermal events, and aerobic respiration. CO₂ also is a by-product of fossil fuel and biomass combustion and other industrial processes. It is the principal anthropogenic GHG that affects the Earth's radiative balance.

- Methane (CH₄) is a naturally occurring gas with a climate change potential approximately 20 times that of CO₂ with regard to climatic warming. CH₄ is produced through anaerobic (without oxygen) decomposition of waste in landfills, animal digestion, decomposition of animal wastes, production and distribution of natural gas and petroleum, coal production, and incomplete fossil fuel combustion.
- Nitrous oxide (N₂O) is a naturally occurring gas with a climate change potential approximately 300 times that of CO₂ with regard to climatic warming. Major sources of N₂O include soil cultivation practices, especially the use of commercial and organic fertilizers, fossil fuel combustion, nitric acid production, and biomass burning.
- Hydrofluorocarbons (HFCs) are man-made compounds containing only hydrogen, fluorine, chlorine, and carbon. HFCs were introduced as a replacement for chlorofluorocarbons, which were identified as ozone depleting substances. The climate change potential of HFCs ranges from approximately 100 to 10,000 times that of CO₂.
- Perfluorocarbons (PFCs) are man-made compounds containing only fluorine and carbon. Similar to HFCs, PFCs have been introduced as a replacement for chlorofluorocarbons. PFCs are also used in manufacturing and are emitted as by-products of industrial processes. PFCs are powerful GHGs, with a climate change potential approximately 5,000 to 10,000 times that of CO₂.
- Sulfur hexafluoride (SF₆) is a colorless gas that is soluble in alcohol and ether, and slightly soluble in water. This compound is a very powerful GHG, with a climate change potential more than 20,000 times that of CO₂, and is used primarily in electric transmission and distribution systems, as well as dielectrics in electronics.

The USEPA Mandatory Reporting Rule became effective on December 29, 2009. Suppliers of fossil fuels or industrial GHGs, manufacturers of vehicles and engines, and facilities with 25,000 metric tons or more per year of carbon dioxide equivalent (CO₂e) emissions must submit annual reports to the USEPA. In addition, the Supreme Court decision in *Massachusetts et al. v. Environmental Protection Agency et al.* (Supreme Court Case 05-1120) found that the USEPA has the authority to list GHGs as pollutants and to regulate emissions of GHGs under the CAA. On April 17, 2009, the USEPA found that CO₂, CH₄, N₂O, HFCs, PFCs, and SF₆ may contribute to air pollution and may endanger public health and welfare.

3.2.1.3 Geology

Eglin AFB is underlain by unnamed Holocene and Pliocene sands of the Citronelle Formation. These sands consist of non-marine quartz sands interspersed with gravel and thin clay lenses. Kaolinite is highly weathered clay found predominantly within the area. Underneath the Citronelle Formation is a Miocene-aged confining bed consisting of clays and clayey sands with limestone and shell fragments that forms the upper confining layer of the Floridan aquifer (SAIC, 2009).

The Citronelle Formation consists of alluvial deposits of cross-bedded sands and gravels with lenses of clay, and occurs beneath the project area to depths of 400 to 600 ft below land surface (bls). Within the project area, the sand and gravel layers of the Citronelle Formation are separated by two thick beds of sandy clay, known as the Pensacola Clay. The Citronelle Formation is underlain by limestone bedrock, which extends to within 400 ft of the surface

in areas and occurs throughout the Florida Panhandle. The regional geologic structure is a simple monocline dipping to the southwest at 30 to 40 ft per mile.

3.2.1.4 Topography

The topography of the Camp Rudder area where the proposed pipelines would be constructed (Alternative 1) is relatively flat (Figure 3-1), with elevations from 140 to 200 ft above mean sea level (msl) over a distance of approximately 6.5 miles. The higher elevations are in the east, approximately 1 mile west of the tie-in to the 7SFG wastewater line (CH2M HILL, 2011). Metts Creek is east of the proposed Camp Rudder Line route along RR 257 where the land surface drops steeply from approximately 150 ft msl to the creek at an elevation of approximately 100 ft msl.

The topography of the Eglin Main Line route where the proposed pipeline (Preferred Alternative or Alternative A) would be constructed is relatively flat (Figure 3-2), with elevations from 80 to 90 ft above msl over a distance of approximately 2.8 miles, with the exception of Garnier Creek and an unnamed tributary where the land surface drops steeply from approximately the 70-ft contour down to the creek at an elevation of approximately 30 ft msl (CH2M HILL, 2011).

3.2.1.5 Soils

The majority of the proposed project area is on the Lakeland Sand soil association (United States Department of Agriculture [USDA] Natural Resources Conservation Service [NRCS], 2010). According to the NRCS website soil survey, soils within the proposed project area are predominantly Lakeland Sand (0 to 5 percent slopes, 5 to 12 percent slopes, and 12 to 30 percent slopes) (NRCS, 2010). Lakeland soils are characterized as excessively drained, nearly level to gently sloping soils primarily on broad ridgetops in uplands. Slopes are smooth to concave. The permeability of Lakeland Sand is high and the runoff potential is low. Depth to water table is more than 80 inches. This soil is not prone to flooding or ponding, and the erosion hazard is slight.

3.2.2 Noise

The noise levels on Eglin AFB result from a combination of human and natural activities. The predominant sources of natural noise are wind and thunder. Major types of current activities that result in human-generated noise in the vicinity of the proposed Camp Rudder and Eglin Main wastewater lines and the lift stations include vehicular traffic from SR 85, military and commercial aircraft operations (Test Area B-70, where supersonic flights are conducted), and munitions testing. No residential buildings are within 700 ft of the proposed pipeline routes or lift station sites.

3.2.3 Air Quality

The air quality at the project area and the surrounding area is considered good. All of Florida, including the proposed project area, is classified as being in attainment for all National Ambient Air Quality Standards (NAAQS) (USEPA, 2011).

The *Title V Air Operation Permit Renewal* (Final Permit Project No. 0910031-013-AV) for Eglin AFB was issued by FDEP on June 1, 2009.



 Proposed Camp Rudder Line

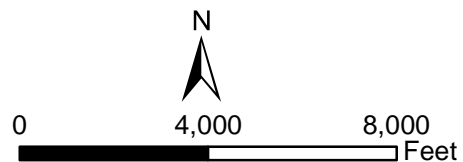
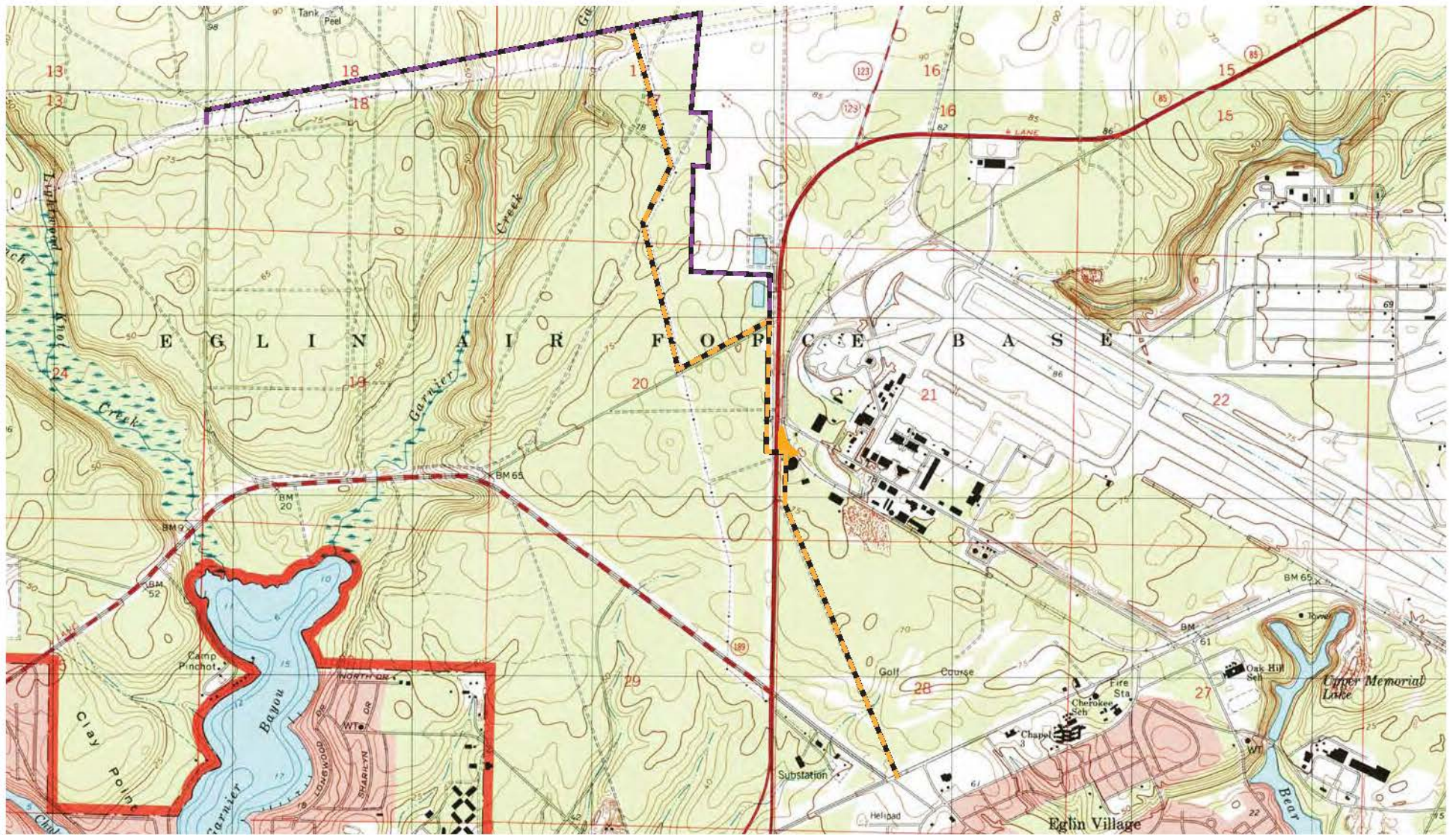


Figure 3-1
Proposed Camp Rudder Line Topographic Map
Eglin Air Force Base

CH2MHILL



- Alternative A
- Preferred Alternative

Source:
 USGS 7.5-minute Quadrangle- Ft Walton Beach
 USGS 7.5-minute Quadrangle- Valparaiso

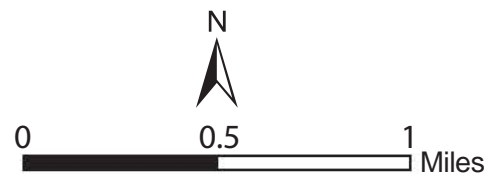


Figure 3-2
 Eglin Main Line Topographic Map
 Eglin Air Force Base

3.2.4 Groundwater

The surficial aquifer, or sand and gravel aquifer, and the Floridan aquifer underlie Eglin AFB. The unconfined sand and gravel aquifer is separated from the confined Floridan aquifer by a low-permeability Pensacola Clay confining layer. Water quality of the sand and gravel aquifer is generally good, though the aquifer is susceptible to contamination. The Floridan aquifer provides higher-quality water and serves as the primary potable water source for Eglin AFB. The top of the Floridan aquifer is about 50 ft below msl in the northeast corner of the installation and increases to 700 ft below msl in the southwestern area of the base.

The low-permeability Pensacola Clay (permeability coefficient of about 10^{-10} centimeter per second) separates the surficial aquifer from the underlying Floridan aquifer. The Floridan aquifer occurs in permeable limestone formations and is a primary source of water supply in the Eglin AFB area. Most water supply wells in the upper Floridan aquifer extend to depths ranging from approximately 400 to 900 ft bls. Eglin AFB has installed several wells to extract both non-potable and potable water from both aquifers (SAIC, 2009). However, groundwater levels in the area have dropped significantly (as much as 160 ft) since the 1940s because of excessive pumping (SAIC, 2009). The Northwest Florida Water Management District has proposed using the sand and gravel aquifer and other alternative sources to supplement the potable water supply (SAIC, 2009).

3.2.5 Surface Water

Eglin AFB encompasses portions of three hydrologic basins and includes more than 300 acres of man-made ponds and natural lakes, 30 miles of rivers with an extensive stream network covering 600 acres, and 20 miles of Gulf of Mexico shoreline and associated estuarine areas (SAIC, 2009). No natural lakes are within or immediately adjacent to the proposed project area, but there are man-made water treatment ponds adjacent to the proposed Eglin Main Line. Several natural streams occur within the general area of the Proposed Action and alternatives. There are streams near the proposed Camp Rudder Line route and two streams are crossed by the proposed Eglin Main Line route: Garnier Creek and an unnamed tributary of Garnier Creek. Water quality in the project area is good. The surface waters near the proposed construction areas (Metts Creek, Milligan Creek, Garnier Creek, and its unnamed tributary [Figures 3-1 and 3-2]) meet all water quality standards and support their designated uses.

3.2.5.1 Camp Rudder Line Alternative 1

In the area of Camp Rudder, water flow is generally to the north. The proposed Camp Rudder Line is in the Yellow River, Pensacola Bay, and Choctawhatchee Bay drainage basins. The northern portion of the Camp Rudder Line route generally drains to Metts Creek and the Yellow River. The southwestern portion of the route drains to the Yellow River and Pensacola Bay, and the southeastern portion discharges into Choctawhatchee Bay and associated tributaries (SAIC, 2009). Pocosin Pond, located northwest of the intersection of RR 213 and RR 236, is a wetland, not an open water feature. No surface water features were observed on or adjacent to the proposed Camp Rudder route.

3.2.5.2 Eglin Main Line Preferred Alternative and Alternative A

Water flow is generally to the south in the area of the proposed Eglin Main Line. The Eglin Main Line and the two lift stations that would be added to the existing line to the APWRF are in the Choctawhatchee Bay drainage basin. Garnier Creek and its unnamed tributary both intersect the proposed Eglin Main Line route. Garnier Creek and its unnamed tributary flow south to Garnier Bayou, which then flows into Choctawhatchee Bay. No surface water features were observed at or in the vicinity of the two lift station sites.

3.2.6 Wetlands

A wetland delineation was conducted along the proposed project routes on October 13, 2010 (CH2M HILL, 2010b). Wetlands were mapped and classified according to the U.S. Fish and Wildlife Service (USFWS) classification system (Cowardin et al., 1979). Wetlands were identified along Garnier Creek and its unnamed tributary on the proposed Eglin Main Line. These streams also had a narrow discontinuous strip of fringing wetland vegetation that crosses the proposed project route. A small emergent/scrub-shrub wetland was observed south of the proposed project route along Garnier Creek. Additional small wetlands were observed upstream of the project area, but these were not delineated or mapped because of the distance from the project area. A larger emergent/scrub-shrub wetland was identified north of the proposed route on the unnamed tributary of Garnier Creek.

No additional wetlands occur on or adjacent to the proposed project areas.

3.2.7 Hazardous and Toxic Substances

An Environmental Baseline Survey (EBS) was completed for each area in the Proposed Action. No hazardous materials are stored on any of the proposed project areas. No Environmental Restoration Program sites are present at or adjacent to any of the proposed project areas. No pesticides or herbicides are stored or mixed on the proposed project areas. Eglin AFB Exterior Electric maintains the electric transmission rights-of-way with mowing twice a year, and no herbicides are used for ROW maintenance (CH2M HILL, 2011).

No buildings are located along any considered routes. Therefore, asbestos-containing materials, lead-based paints, and radon would not occur along the routes. No polychlorinated biphenyls (PCBs) or medical/biohazardous wastes are present on the proposed project areas. No munitions or UXO are stored along the proposed Camp Rudder Line. However, an active test range intersects the Camp Rudder Line route along RR 213, and the southern portion of the route is within an area where UXO may be present in the soil. UXO would not occur on the other proposed project areas. A UXO survey conducted by one or more active duty EOD Specialists or UXO qualified personnel will be required prior to any ground intrusive activity. This survey will be utilized by AAC/SEW to determine the explosive safety requirements and procedures that will be implemented to protect personnel and property during construction.

An abandoned foundation slab was observed on the proposed Eglin Main Line route within the Eglin electric transmission line corridor. It is believed that this slab was used for ground equipment and would not contain any hazardous or toxic substances (CH2M HILL, 2011).

There are no aboveground storage tanks (ASTs), self-contained emergency generators, or underground storage tanks (USTs) on the proposed project areas. However, several ASTs

and USTs are located within 0.5 mile of the proposed pipeline routes and lift station locations (Figures 3-3 and 3-4) (CH2M HILL, 2011).

3.2.8 Traffic

Most of the pipeline routes follow existing range roads (RR 257, RR 213) and electric power transmission rights-of-way. There are unimproved service roads along the electric power transmission rights-of-way from RR 236 and General Robert M. Bond Boulevard that provide access to the proposed project vicinity. No new access routes would be constructed. Construction traffic and subsequent maintenance visits would not disrupt traffic flow on SR 85.

3.2.9 Cultural Resources

Eglin AFB has two sites within the installation that are listed on the National Register of Historic Places (NRHP) (G. Cole/CEVH, personal communication). An additional 164 sites are listed as eligible for the NRHP and 387 sites are listed as potentially eligible for the NRHP (G. Cole/CEVH, personal communication). An archaeological cultural resources survey was conducted for the considered routes to determine whether sites within the project area would meet the minimum criteria for listing in the NRHP.

During the survey activities seven new sites were identified and the boundaries of two known sites were expanded. All of the sites have been evaluated as ineligible for nomination to the NRHP. No further work is recommended for these sites and within the survey tracts. The State Historic Preservation Office (SHPO) concurred (September 13, 2011) with these findings and determined that the planned project will not have an effect on eligible resources (Appendix A). Should project work reveal new findings of potentially significant cultural resources, such findings will be processed under 36CFR§800.13 and applicable provisions of Eglin AFB's Integrated Cultural Resources Management Plan (Eglin AFB, 2005).

Following Eglin AFB's working practice for consulting federally recognized tribes, the tribes Eglin routinely consults were not contacted during planning for this project because no cultural resources considered of interest to tribes were identified. Eglin AFB has made resource information available to the tribes for their comments and further consultation if required.

3.2.10 Flood Hazard

Garnier Creek and its unnamed tributary on the proposed Eglin Main Line have associated floodplains. Portions of the proposed Eglin Main Line and Camp Rudder Line routes are within the identified 100-year flood inundation area (SAIC, 2009).

3.2.11 Visual Resources

The area surrounding the Camp Rudder proposed lift station site is generally developed for wastewater treatment, military cantonment, and recreational and residential uses. The proposed pipeline routes parallel RRs and electric transmission rights-of-way and cross spray irrigation fields. These are rural areas within Eglin AFB, with no businesses or homes in proximity. There are no public viewing areas or natural scenic areas for sight-seeing along these RRs and rights-of-way.



- ▲ AST
- UST
- Mobile
- Proposed Camp Rudder Line
- Existing Wastewater Line

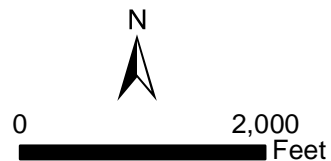


Figure 3-3
Storage Tanks within ½ Mile of
Camp Rudder Line Lift Station
Eglin Air Force Base

CH2MHILL

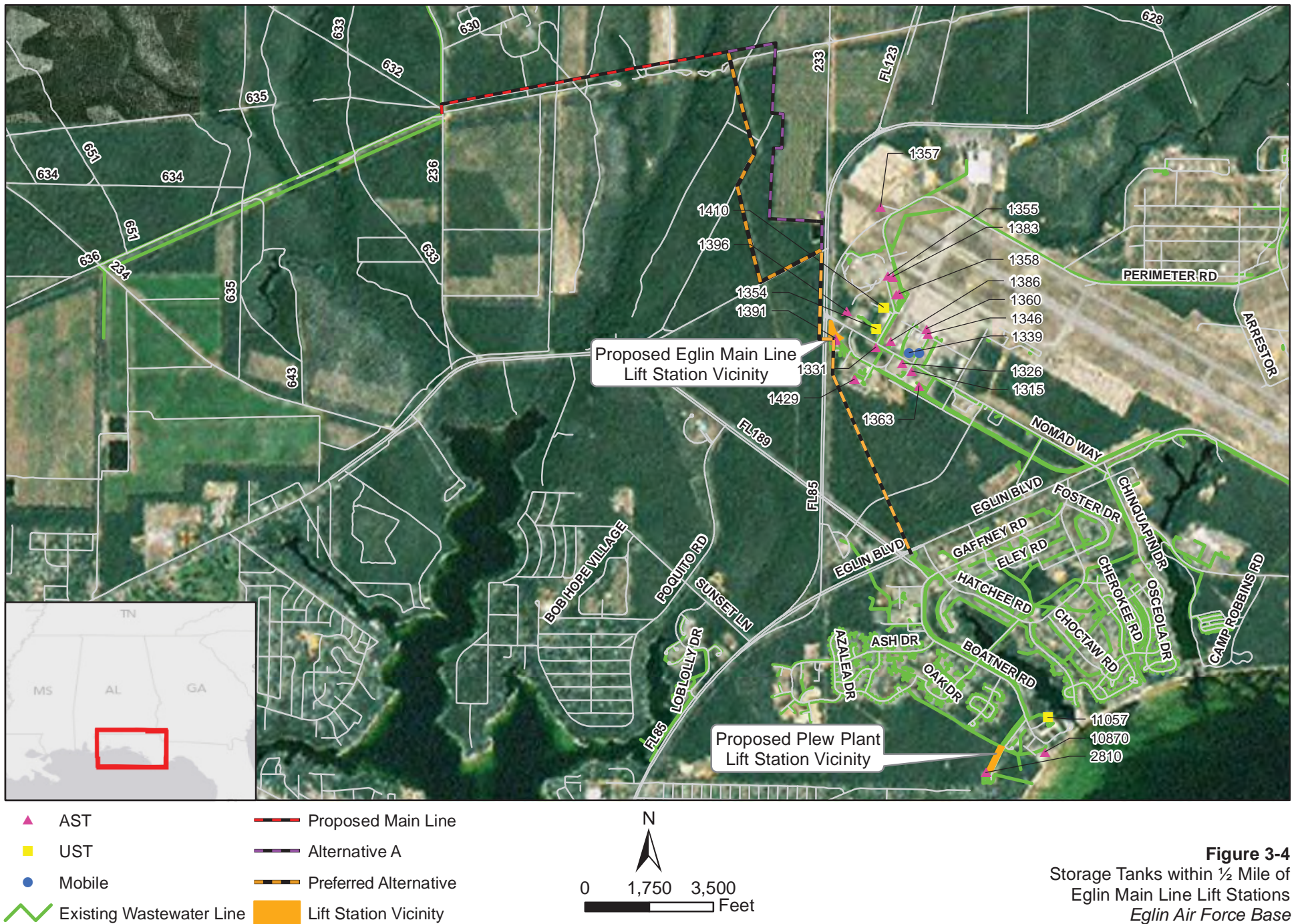


Figure 3-4
Storage Tanks within ½ Mile of
Eglin Main Line Lift Stations
Eglin Air Force Base

3.2.12 Biological Resources

Biological resources include the native and introduced terrestrial and aquatic plants and animals around Eglin AFB. The land areas at Eglin AFB are home to unusually diverse biological resources, including several sensitive species and habitats.

3.2.12.1 Terrestrial Flora and Fauna

The project areas consist primarily of maintained electric transmission and RR rights-of-way. The surrounding area is a mosaic of electric transmission ROW and forest managed by Eglin AFB. A terrestrial flora field survey was conducted in conjunction with a T&E species field survey on October 12 and 13, 2010 (CH2M HILL, 2010c).

The proposed Eglin Main Line route habitat is open sandhills dominated at the time of the field survey by false foxglove (*Agalinis divaricata*), dog-tongue (*Eriogonum tomentosum*), yankeeweed (*Eupatorium compositifolium*), tall jointweed (*Polygonella gracilis*), Canada goldenrod (*Solidago canadensis*), Maryland goldenaster (*Chrysopsis mariana*), and scratch daisy (*Haplopappus divaricata*). There were seedling trees and shrubs within the ROW, including beautyberry (*Callicarpa americana*), turkey oak (*Quercus laevis*), red savory (*Calamintha coccinea*), and yaupon (*Ilex vomitoria*). Along either side of the ROW, the mixed pine-hardwood forest canopy consisted primarily of longleaf pine, turkey oak, and myrtle oak (*Quercus myrtifolia*). The understory included saw palmetto (*Serenoa repens*), five species of greenbrier (*Smilax auriculata*, *Smilax glauca*, *Smilax laurifolia*, *Smilax pumila*, and *Smilax rotundifolia*), and the shrub and seedling species observed within the ROW (CH2M HILL, 2010c).

The entire proposed Camp Rudder route, outside the fenced area, is in open sandhill environment consisting predominantly of longleaf pine, with scattered sand pine and turkey oak, occurring over a xeric, deep sand substrate. The understory consisted of greenbriers (*Smilax auriculata* and *Smilax laurifolia*), Maryland goldenaster, blueberries (*Vaccinium* spp.), Canada goldenrod, and scratch daisy. The more open areas contained wiregrass (*Aristida stricta*) and little bluestem (*Schizachyrium scoparium*). More mesic patches within the forest contained yaupon and a greater proportion of hardwood species (CH2M HILL, 2010c).

Within the fenced area of Camp Rudder, the route crosses landscaped and planted areas with scattered longleaf pine and a xeric hardwood forest dominated by species tolerant of dry conditions, predominantly turkey oak and myrtle oak with a dense yaupon understory.

Bottomland hardwood forested wetlands occur along the larger streams on the Camp Rudder route. These areas are dominated by red bay (*Persea borbonia*), swamp tupelo (*Nyssa aquatica*), and sweetbay (*Magnolia virginiana*), with flowering magnolia (*Magnolia grandiflora*) dominant on surrounding upland areas.

Terrestrial fauna in the general project area include species typical of open longleaf pine forests and longleaf sandhill uplands in the Florida Panhandle. Typical animals include red-tailed hawk; great horned owl; fox squirrel; eastern diamondback rattlesnake; pine snake; white-tailed deer; amphibians; ground-dwelling small mammals; and song birds (Eglin AFB, 2010).

The Proposed Action is not within or near areas of significant botanical sites established by Eglin AFB, nor is it in areas defined by the Florida Natural Areas Inventory as high-quality natural communities (Eglin AFB, 2010). The Proposed Action is also not within or near the Game Species Management Emphasis Areas designated by Eglin AFB for white-tailed deer, wild turkey, or bobwhite quail (Eglin AFB, 2010).

3.2.12.2 Aquatic Flora and Fauna

The proposed Eglin Main Line route would cross two perennial streams: Garnier Creek and its smaller unnamed tributary. Forest areas along the slopes leading to the two streams were much denser than surrounding sandhills forest at the top of the slope, with thick understory and subcanopy vegetation.

Garnier Creek is a perennial stream (approximately 20 ft wide) with sand and silt substrate typical of coastal plain systems. Aquatic vegetation, riffles, runs, and shallow pools provide fair to good habitat for aquatic diversity. Small wetlands upstream and downstream of the reach provide stability despite being located within or adjacent to the transmission line ROW. Fish species observed during the field visit included minnows (family Cyprinidae), sunfishes (family Centrarchidae), and mosquitofish (*Gambusia affinis*).

The unnamed tributary of Garnier Creek is a smaller perennial headwater stream (approximately 8 ft wide) located west of the mainstem of Garnier Creek. The tributary flows into the mainstem south of the transmission line ROW. The tributary was predominantly sand and silt substrates with generally poorer habitat quality compared to the larger Garnier Creek due to more extensive long runs in the tributary and its lower percentage of pool and riffle habitat. Similar to the mainstem, a wetland upstream of the reach within the project area provides stability within the transmission corridor. Mosquitofish was the only fish species observed in this tributary during the field visit.

Two emergent/scrub-shrub wetlands were observed adjacent to the electric transmission ROW, one associated with each stream. Both streams are protected by maintained erosion control projects on each side. A third maintained erosion control project was identified near the point where the Preferred Alternative and Alternative A diverge. This erosion control project protects a springhead that is approximately 200 ft north of the Eglin electric transmission ROW.

There are no aquatic areas in the vicinity of the proposed Camp Rudder route; therefore, no impacts to aquatic flora and fauna are anticipated.

3.2.12.3 Threatened and Endangered Species

The USFWS and the Florida Fish and Wildlife Conservation Commission (FWC) databases were reviewed for federal or state listed species with potential to occur on or near the project areas. The USFWS database identifies 77 federally and state listed species with the potential to occur in Okaloosa County (Appendix B) (USFWS, 2011a; FWC, 2010).

Eleven federally listed T&E species are actively managed on Eglin AFB, as either year-round or seasonal residents. Other federally listed species have been documented on Eglin AFB as migrants. The American alligator, common on Eglin AFB, also is federally listed, because of its similarity in appearance to the endangered American crocodile (Eglin AFB, 2010).

There are 67 state-listed T&E species found on Eglin, with plant species making up most (55) of the list. Of the 12 state-listed T&E animal species, only 4 (snowy plover, least tern, southeastern American kestrel, and Florida black bear) are not also federally listed as a threatened or endangered species. Eighteen species of animals are listed as state Species of Special Concern, and four of these are federally listed. An additional 17 animal species are not listed by the FWC or the USFWS, but are tracked by the Florida Natural Areas Inventory due to their rarity and/or declining population trends (Eglin AFB, 2010).

A T&E species field survey was conducted along the proposed pipeline routes on October 12 and 13, 2010 (CH2M HILL, 2010c). The results of this field survey are provided in Appendix C. Based upon the results of the field survey, there are three potential T&E species that may inhabit the areas surveyed: the federally endangered RCW, the federally threatened eastern indigo snake (*Drymarchon corais couperi*), and the gopher tortoise (*Gopherus polyphemus*), which is a Species of Special Concern in Florida (USFWS, 2011a). In July 2011, the USFWS determined that listing the gopher tortoise in the eastern portion of its range as threatened was warranted but precluded by higher priority actions and this species was placed on the candidate species list (USFWS, 2011b).

The Okaloosa darter (*Etheostoma okaloosae*), a federally endangered fish, is found only in the Choctawhatchee Bay drainage in Okaloosa and Walton Counties. These darters inhabit vegetated areas of clear, fast-flowing runs over sand and detritus (USFWS, 1998). While the habitat is potentially suitable for the Okaloosa darter, Eglin AFB has documented with USFWS that this species has never been found in Garnier Creek or the unnamed tributary (R. Miller/CEVSN, personal communication). As a result, there would be no effect to the Okaloosa darter and ESA Section 7 consultation for the Okaloosa darter would not be required.

The RCW requires open pine forest dominated by older, mature pines for nesting and roosting (USFWS, 2003). Longleaf pine is preferred for cavity excavation because it produces the most resin for the longest period of time (USFWS, 2003). Eglin has a process for determining foraging habitat composition, as described in detail in Appendix D. The woodpecker also prefers habitats with abundant foraging areas of open mature pine canopy overstory with little or no hardwoods and low-density midstory (USFWS, 2003).

The FWC currently has surveying, permitting, and mitigation guidelines for development in areas where the gopher tortoise is known or suspected to occur (FWC, 2008). The gopher tortoise inhabits dry, sandy uplands with well drained soils where it constructs sloping burrows (Mount, 1975; FWC, 2007). The sandhill habitats of the gopher tortoise are generally associated with longleaf pine and turkey oak (*Quercus laevis*) (Mount, 1975; FWC, 2007). The gopher tortoise burrows provide refugia for several commensal species (those that use gopher tortoise burrows), including the imperiled Florida pine snake and the eastern indigo snake (Mount, 1975; FWC, 2007).

The habitat of the eastern indigo snake in northwest Florida is primarily high pineland and flatwoods in proximity to streams or swamp edges (USFWS, 1982; Mount, 1975). These snakes rely heavily on gopher tortoise burrows for overwintering sites and are generally found in habitats similar to those of the gopher tortoise (Mount, 1975). The species is extremely uncommon on the Eglin range; only 29 indigo snakes were sighted throughout the Eglin range from 1956 to 1999, and none have been reported since 1999.

A biological assessment (BA) was prepared to assess impacts to these three species in conjunction with this EA (Appendix D). As described in the BA, no critical habitat for RCW or eastern indigo snake has been designated in the area.

3.2.13 Socioeconomic Resources

3.2.13.1 Land Use

Undisturbed forested upland is the predominant land use type surrounding the proposed Camp Rudder Line route outside the fenced Camp Rudder area. The surrounding land uses within the fenced Camp Rudder area include industrial, residential, recreational, and open space. A 6-mile portion of the proposed pipeline route traverses a UXO area, and 1-mile portion traverses the Range Test Area B-70, which is active. The Camp Rudder airfield is located approximately 0.4 mile west of the proposed route.

Undisturbed forested upland is the predominant land use type surrounding the proposed Eglin Main Line adjacent to the electric transmission ROW. The southern part of Alternative A would pass through the Eglin AFB spray irrigation fields. The Eglin airfield is approximately 0.75 mile east of the proposed Eglin Main Line.

The area surrounding the proposed Eglin Main WWTP lift station is predominantly undisturbed and industrial land. The Plew housing area and undisturbed lands surround the proposed Plew STP lift station.

3.2.13.2 Utility Infrastructure

Overhead electric transmission lines maintained and operated by Eglin AFB Exterior Electric are located along both the proposed Eglin Main Line and the proposed Camp Rudder Line. Eglin Main Line Preferred Alternative would also follow a portion of the Gulf Power transmission line ROW. Other communications infrastructure is buried along or parallel to the proposed routes.

3.2.13.3 Jobs and Employment

Based on the 2010 census, Okaloosa County has a population of 180,822 (U.S. Census Bureau, 2011). Approximately 53 percent of the persons age 16 and older are employed and the unemployment rate is 8.1 percent (Enterprise Florida, Inc., 2011). The workforce for the proposed project would be drawn from the local construction labor pool and the project would not support any new jobs in the county.

3.2.13.4 Recreation

The Camp Rudder area includes recreational (pool, basketball court) and residential land uses for military staff. These facilities are not open to public use. Recreational hunting is highly controlled, as is access to RR 257 and RR 213. Military activities and military use of roads in the area have priority over public use. There is no recreational use of the areas along the proposed Eglin Main Line or at the two proposed lift station sites on the line to the APWRF. There are no hiking or bicycling trails that cross or parallel the proposed pipeline routes or proposed lift station sites. There are no camping or fishing areas open to public use in the proposed project areas.

3.2.13.5 Safety

As detailed in the Eglin Emergency Management Systems Procedure S-4.4.7 *Emergency Preparedness and Response*, January 2010, the following are among Eglin AFB environmental emergency response plans:

- *Spill, Prevention, Control and Countermeasures Plan* for petroleum storage
- *Facility Response Plan* for onsite petroleum storage under specific conditions
- *Facility Response Plan* for marine terminal facilities
- *Basic and Comprehensive Response Plans* for transporting petroleum on roads and railroads
- *Hazardous Waste Contingency Plan* for facilities with specified volumes of hazardous waste
- *Risk Management Plans and Process Safety Plans* for storage of certain chemicals above threshold quantities
- *Fire Prevention Plans and Emergency Action Plans* for certain toxic, reactive, flammable, or explosive chemicals
- *Storm Water Pollution Prevention Plan* for stormwater runoff management

All plans include the appropriate level of personal protective equipment according to Occupational Safety and Health Administration regulations; and most establish tactical priorities to ensure rescue/life safety/responder safety, and establish a safety/security team chief.

Camp Rudder is fenced to prevent the general public from entering the area. No munitions or UXO are stored along the proposed Camp Rudder Line route. However, Range Test Area B-70, an active test range, intersects the proposed Camp Rudder Line route for approximately 1 mile along RR 213, and the 6-mile southern portion of this route is within a UXO-probable area, where UXO may be present in the soil. A UXO survey conducted by active duty EOD Specialists or UXO qualified personnel will be required prior to any ground intrusive activity. This survey will be utilized by AAC/SEW to determine the explosive safety requirements and procedures that will be implemented to protect personnel and property during construction.

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4.0 Environmental Consequences

4.1 Physical Setting

4.1.1 Climate

Proposed Action: Construction of three lift stations, two new wastewater pipelines, and fiber optic conduits would not cause direct changes to airflow or precipitation patterns in the region. Construction and operation of three lift stations, two new wastewater pipelines, and fiber optic conduits would not directly cause a change to the regional climate. Any impact to the regional climate would be negligible.

No Action Alternative: No construction and no change in existing conditions would occur. There would be no impact on climate.

4.1.2 Climate Change

Proposed Action: There would be GHG emissions associated with construction of pipelines, lift stations, and fiber optic conduits. Potential GHG sources include:

- Land clearing and onsite equipment use
- Worker accommodation
- Transport of materials
- Traffic delays

The workforce would be drawn from the local construction labor pool that live and work in the area, resulting in no additional emissions related to worker accommodation for the area. Because all roads would be crossed by directional bore, there would be no GHG emissions from traffic delays associated with the work. The elimination of traffic delays and the associated GHG emissions from stopped traffic would result in a 78 percent reduction in pipeline construction GHG emissions compared to open trench installation across roads (Centre for the Advancement of Trenchless Technologies, 2007). GHG emissions from land-clearing, equipment use, and transport of materials would be comparable to those of any small construction job and would not result in generation of more than 25,000 metric tons CO₂e.

Operation of the wastewater lines, lift stations, and fiber optic conduits would result in minimal emissions of GHGs, which would derive from the electric power used to operate the systems.

Construction and operation of three lift stations, two new wastewater pipelines, and fiber optic conduits would not appreciably increase GHGs. Any impact to climate change would be negligible.

No Action Alternative: No construction and no change in existing conditions would occur. There would be no impact on climate.

4.1.3 Geology

Proposed Action: Construction of the proposed three lift stations, two new wastewater pipelines, and fiber optic conduits would occur on the land surface and in surface soils. Disturbance would not reach the underlying bedrock. Only limited site preparation would be required and the impact to the surficial Citronelle Formation would be negligible.

No Action Alternative: Under the No Action Alternative, no construction activity would occur. There would be no impacts to geology.

4.1.4 Topography

Proposed Action: Because of the relatively level site topography, construction of the Proposed Action would not noticeably alter site topography. Site grading would restore the pipeline areas to original contours; and grading at the lift stations would be negligible, because of the relatively small size of the lift stations.

No Action Alternative: Under the No Action Alternative, no construction activity would occur. There would be no impacts to topography.

4.1.5 Soils

Proposed Action: There would be temporary soil disturbance during construction of the wastewater pipelines, and the soils beneath the lift stations would be permanently altered. Disturbed soils would be covered by gravel or concrete within the lift station footprint and stabilized through reseeding and mulching if outside the footprint. The small size of the proposed construction footprint relative to the amount of soil in the region would render the impact to soils negligible.

No Action Alternative: Under the No Action Alternative, no construction activity would occur. There would be no impacts to soils.

4.1.6 Noise

Proposed Action: Operation of the lift stations and pipelines would not result in appreciable changes in the noise environment. Construction activities would cause temporary and negligible changes in the noise environment. Heavy equipment would be used for site clearing and construction. Operation of this equipment would occur during normal daytime business hours. There are no sensitive receptors (residents, workers) within 700 ft the project area. Potential receptors would receive only incidental exposure, such as when walking between parking areas and buildings, and may experience some disruption of outdoor conversations, but any impacts would be minor.

Construction and operation of the lift stations would not significantly increase noise levels on Eglin AFB or the areas surrounding the proposed Eglin Main Line. Any impacts from noise would be temporary and minor.

No Action Alternative: Under the No Action Alternative, no construction activity would occur. There would be no change in the noise environment and no impacts from noise.

4.1.7 Air Quality

Proposed Action: Mobile source emissions from construction equipment would be created by the Proposed Action. However, the construction period would be of short duration and the exhaust from construction equipment onsite would be minor compared to the typical traffic on SR 85 and SR 189. Any impacts would be temporary and less than significant. The short duration of the construction period would preclude significant interaction effects with other projects and activities. There would be potential for fugitive dust from clearing and grubbing associated with site preparation of the wastewater pipelines and from general construction activities at the lift stations. BMPs to be used would include, but not be limited to, mulching bare soil and moistening heavy work areas. Construction would be done in segments, minimizing the amount of disturbed soil at any one time. Final soil stabilization would be implemented immediately after construction of lift stations and installation of fiber optic conduits along the wastewater routes.

No Action Alternative: No change in existing conditions would result from the No Action Alternative. Therefore, no impacts to air quality would result.

4.1.8 Groundwater

Proposed Action: Under the Proposed Action, no activities would occur that would impact site or regional groundwater. Construction of the lift stations and pipelines would not encroach on underlying bedrock or surficial aquifers. All soil disturbance would be confined to the near-surface zone. No impacts to groundwater would result. Indirect impacts could occur if a pipe were to develop a leak and wastewater were to reach the surficial aquifer before the pipe could be repaired. Regular pipe inspection and maintenance by OCWS would minimize this risk.

No Action Alternative: Under the No Action Alternative, conditions would remain as they are and no impacts to geohydrology or water quality would result.

4.1.9 Surface Water

Proposed Action: No surface waters would be impacted directly in the proposed project area. Construction and operation of the new lift stations would have no potential for direct impacts to surface waters. Directional bore under the creeks would avoid direct impacts. OCWS will prepare construction plans that will address erosion control, including appropriate BMPs to protect surface waters during construction. An Engineering Inspector will oversee the work to make sure construction is in compliance with permit requirements.

Prior to construction of the pipelines and lift stations, OCWS will submit a Joint Environmental Resource Permit application to FDEP and USACE for the crossing of Garnier Creek and its tributary, pursuant to Chapter 62-343 of the FAC. Because the directional bore crossing beneath the streams would not require a CWA Section 404 permit from USACE, OCWS will request a letter from USACE concurring that no permit is required as part of the application. The Joint Environmental Resource Permit will be obtained prior to starting work and it will contain a Frac-Out Plan to be implemented in the event of an accidental release of drilling mud.

The construction plans will ensure that creeks and associated wetlands within the project area are not affected by pipeline construction. The construction plans also will address

access to work areas, positioning of drilling rigs, and management of work and staging areas. Implementation of the Frac-Out Plan for directional bore for construction of the Eglin Main Line will minimize the potential for immediate and downstream impacts to water quality and aquatic habitats in the event of an accidental release of drilling mud.

Indirect impacts to surface waters could occur if a pipe were to develop a leak and wastewater were to reach the creek before the pipe could be repaired. Regular pipe inspection and maintenance by OCWS would minimize this risk.

Stormwater runoff from construction near creeks would have the potential to negatively impact surface waters. However, the project design would include appropriate construction stormwater BMPs that would be implemented and maintained to minimize the potential for sediment erosion or turbidity impacts to surface waters. These BMPs could include, but would not be limited to, implementation of good housekeeping techniques, establishment of gravel construction entrances, use and maintenance of silt fencing, temporary stormwater detention areas with sediment filters, soil stabilization with seed and mulch, and temporary ROW diversions.

The lift station sites and pipeline rights-of-way would, to the extent practicable, be graded to retain stormwater and allow infiltration. Geotechnical analysis conducted by OCWS determined that the soil infiltration rate is sufficient to prevent stormwater runoff and avoid impacts to potential receiving waters.

OCWS would obtain a National Pollutant Discharge Elimination System (NPDES) stormwater permit from FDEP, pursuant to Chapter 62-621 of the FAC, prior to any ground-disturbing activities. This NPDES permit will contain a Stormwater Pollution Prevention Plan (SWPPP) and will be filed as part of the pre-construction activities. Use of BMPs and post-construction stormwater controls, as appropriate, would minimize the potential for impacts, such that any incidental impacts would be temporary and less than significant.

No Action Alternative: Under the No Action Alternative, conditions would remain as they are and no impacts to surface water would result.

4.1.10 Wetlands

Proposed Action: No wetlands would be impacted in the proposed project area.

Construction and operation of the new lift stations would have no potential for direct impacts to wetlands. Directional bore under the creeks and associated floodplain wetlands would avoid direct impacts. OCWS will prepare construction plans that will address erosion control, including appropriate BMPs to protect surface waters during construction. An Engineering Inspector will oversee the work to make sure construction is in compliance with permit requirements.

Prior to construction of the pipelines and lift stations, OCWS will submit a Joint Environmental Resource Permit application to FDEP and USACE for the crossing of Garnier Creek and its tributary, pursuant to Chapter 62-343 of the FAC. Because the directional bore crossing beneath the streams would not require a CWA Section 404 permit from USACE, OCWS will request a letter from USACE concurring that no permit is required as part of the joint permit application. The Joint Environmental Resource Permit will be obtained prior to

starting work and it will contain a Frac-Out Plan to be implemented in the event of an accidental release of drilling mud.

The construction plans will ensure that creeks and associated wetlands within the project area are not affected by pipeline construction. The construction plans also will address access to work areas, positioning of drilling rigs, and management of work and staging areas. Implementation of the Frac-Out Plan for directional bore for construction of the Eglin Main Line will minimize the potential for immediate and downstream impacts to water quality and aquatic habitats in the event of an accidental release of drilling mud.

Indirect impacts could occur if a pipe were to develop a leak and wastewater were to reach wetlands before the pipe could be repaired. Temporary disturbance of the wetland could occur during pipe repair if located in a wetland adjacent to one of the creeks. Regular pipe inspection and maintenance by OCWS would minimize this risk.

Stormwater runoff from the construction site would have the potential to negatively impact wetlands. However, the project design would include appropriate construction stormwater BMPs that would be implemented and maintained to minimize the potential for sediment erosion or turbidity impacts to nearby wetlands. These BMPs may include, but would not be limited to, implementation of good housekeeping techniques, establishment of gravel construction entrances, use and maintenance of silt fencing, temporary stormwater detention areas with sediment filters, soil stabilization with seed and mulch, and temporary ROW diversions.

The lift station sites and pipeline rights-of-way would, to the extent practicable, be graded to retain stormwater onsite and allow infiltration of stormwater. Geotechnical analysis of the site determined that the soil infiltration rate is sufficient to prevent stormwater runoff and avoid impacts to potential receiving waters.

OCWS would obtain an NPDES stormwater permit from FDEP, pursuant to Chapter 62-621 of the FAC prior to any ground-disturbing activities. This NPDES permit will contain a SWPPP and will be filed as part of the pre-construction activities. Use of BMPs and post-construction stormwater controls, as appropriate, would minimize the potential for wetland impacts, such that any incidental impacts would be temporary and less than significant.

No Action Alternative: Under the No Action Alternative, conditions would remain as they are and no impacts to wetlands would result.

4.1.11 Hazardous and Toxic Substances

Proposed Action: During construction, no fuels or petroleum products would be stored onsite and no equipment maintenance would be performed onsite. The project design would require use of appropriate BMPs for all refueling activities to minimize the risk of contamination from an accidental spill of petroleum products during construction. Additionally, project design would require that all equipment be maintained in proper working condition to minimize incidental leakage. Any such leakage would constitute a less than significant impact on the environment.

A UXO survey would be conducted along the proposed Camp Rudder Line by one or more active duty EOD Specialists or UXO qualified personnel prior to any ground intrusive activity. This survey will be utilized by AAC/SEW to determine the explosive safety

requirements and procedures that will be implemented to protect personnel and property during construction. Should UXO be identified during construction, it would be properly disposed of by UXO qualified personnel following approved procedures prior to construction.

No Action Alternative: Under the No Action Alternative, conditions would remain as they are and no impacts to hazardous and toxic substances would result.

4.1.12 Traffic

Proposed Action: Construction and operation of three lift stations and the fiber optic conduits would not have an appreciable effect on traffic. However, temporary disruption of traffic flow could occur during construction of the two new wastewater pipelines along the segments paralleling RR 257, RR 213, and General Robert M. Bond Boulevard and along the short segment through Camp Rudder. Construction along the remainder of the pipeline routes that follow electric power transmission rights-of-way and/or the edge of the spray irrigation fields would not affect traffic flow during construction activities.

Operation of the pipelines and lift stations would not affect traffic. Access for routine inspection and maintenance activities would be a negligible impact to traffic. Construction traffic and subsequent maintenance visits would not disrupt traffic flow on SR 85.

Limited temporary traffic control may be needed on RR 257 and RR 213 to accommodate construction-related traffic leaving and entering the Camp Rudder construction area. Construction would be coordinated with Eglin AFB to minimize the potential for disruption of military traffic. Any disruptions would likely be temporary and minor.

Temporary traffic control may be needed on General Robert M. Bond Boulevard to accommodate construction-related traffic, such as delivery of pipes or construction equipment. Any disruptions would likely be temporary and negligible.

No Action Alternative: Under the No Action Alternative, road conditions would remain as they are and no impacts to traffic would result.

4.1.13 Cultural Resources

Proposed Action: An archaeological and historical cultural resources survey was conducted. Based on the results of the survey, Eglin AFB determined that the Proposed Action would have no effect on cultural resources listed, or eligible for listing, in the NRHP. Eglin AFB submitted a final report to the SHPO and the SHPO issued a concurrence letter dated September 13, 2011 (Appendix A). Through submittal of the final report and receipt of the SHPO concurrence letter, Eglin AFB has complied with Section 106 of the NHPA.

Section 4.6.3 provides a description of the process that would be followed should there be an inadvertent discovery of cultural resources at any location along the project routes during construction.

No Action Alternative: Under the No Action Alternative, no construction activity would occur. There would be no change in existing conditions and no impacts to cultural resources.

4.1.14 Flood Hazard

Proposed Action: The proposed Camp Rudder Line and the two proposed lift stations on the APWRF line would not be within floodprone areas. The proposed Eglin Main Line would cross two streams and their associated floodprone areas, but the remainder of the route would be outside of any floodprone areas. The portion of the wastewater pipeline that would cross floodprone areas would be constructed below grade using directional bore technology. No fill or above-grade structures would be placed within floodplains or floodprone areas as a result of the Proposed Action. Therefore, implementation of the Proposed Action would not alter any flood elevations or recurrence frequencies.

No Action Alternative: Under the No Action Alternative, conditions would remain as they are and no impacts to floodplains or flood hazards would result.

4.1.15 Visual Resources

Proposed Action: The majority of the Proposed Action area is surrounded by unimproved lands, RRs, and overhead electric transmission lines. Small portions of the project areas are within Camp Rudder and near Eglin main base. The proposed lift station and pipeline locations are visually screened from residential areas. Therefore, any impact on visual resources resulting from construction and operation of the Proposed Action would be negligible.

No Action Alternative: Under the No Action Alternative, conditions would remain as they are and no impacts to visual resources would result.

4.1.16 Biological Resources

4.1.16.1 Terrestrial Flora and Fauna

Proposed Action: Site preparation and pipeline construction could cause animals to temporarily relocate from the project area and adjoining habitats. Upon completion of construction, animals would likely return to the project area. Limited clearing of pine forest habitat would be a less than significant impact considering the more than 362,000 acres of similar habitat on Eglin AFB (Eglin AFB, 2010).

There would be temporary disturbance from construction and loss of approximately 3.2 acres of mixed pine-hardwood forest. Animals would be displaced to surrounding similar habitat. The conversion of this mixed pine-hardwood forest habitat to maintained grass may benefit grazing species.

The route selection process minimized the amount of clearing that would be required for project construction and co-located routes with other disturbed areas to the extent practical. Because any forest that would be converted is already affected by fragmentation from electric transmission rights-of-way and traffic corridor infrastructure, any direct and cumulative impacts would be minimal.

OCWS must coordinate with the Eglin Natural Resources Staff (Mr. Bob Miller, 96 CEG/CEVSNW, 883-1153) prior to any tree removal as trees may be merchantable.

No Action Alternative: Under the No Action Alternative, no construction activity would occur at the site. There would be no change in existing conditions and no impacts to terrestrial flora and fauna.

4.1.16.2 Aquatic Flora and Fauna

Proposed Action: Site preparation and pipeline construction would likely cause direct impacts through temporary minor disturbance to aquatic animals as the pipeline is installed by directional boring underneath the two streams. The contractor will be required to develop a work plan for directional bore to ensure that creeks and associated wetlands within the project area are not affected by pipeline construction. The directional bore work plan will address access to work areas, positioning of drilling rigs, and management of work and staging areas. The directional bore work plan also will include a Frac-Out Plan to address accidental release of drilling mud. Implementation of the Frac-Out Plan for directional bore for construction of the Eglin Main Line will minimize the potential for immediate and downstream impacts to aquatic flora and fauna in the event of a release of drilling mud.

Indirect impacts could occur if the pipeline were to leak or need to be removed or repaired. Regular pipe inspection and maintenance by OCWS would minimize this risk.

No Action Alternative: Under the No Action Alternative, no construction activity would occur at the site. There would be no change in existing conditions and no impacts to aquatic flora and fauna.

4.1.16.3 Threatened and Endangered Species

Proposed Action: Known rare or protected species on Eglin AFB occur within the proposed project area. However, no critical habitat for these species has been designated in the area of the proposed pipeline routes. A T&E species field survey conducted on October 12 and 13, 2010 found an inactive gopher tortoise burrow and evidence (tracks) of recent activity within the proposed Eglin Main Line project area. No indigo snakes were observed during reconnaissance efforts; however, as noted in Section 3.2.8.3, indigo snakes can inhabit areas where gopher tortoise are active.

In accordance with Section 7 of the ESA, a consultation with the United States Fish and Wildlife Service (USFWS) has been completed. Their concurrence with the Biological Assessment (BA) was received on March 31, 2011. This BA describes guidelines under which the project must be completed to minimize potential impacts to threatened and/or endangered species (Appendix D). A copy of this document can be provided by email if requested. OCWS will coordinate with Eglin Natural Resources Staff (Mr. Bob Miller, 96 CEG/CEVSNW, 883-1153) prior to any ground disturbance to complete protected species surveys. The species assessed in the BA are discussed in the following sections.

While the habitat in Garnier Creek and its unnamed tributary is potentially suitable for the Okaloosa darter, Eglin AFB has documented with USFWS that this species has never been found in Garnier Creek or the unnamed tributary (R. Miller/CEVSN, personal communication). As a result, there would be no effect to the Okaloosa darter.

Red-cockaded Woodpecker

Most of the proposed Camp Rudder Line route outside the fenced area of Camp Rudder is suitable for RCW. There are minor exceptions in areas with dense subcanopy. Numerous cavity trees were marked along RR 213, indicating that RCWs inhabit the area and Eglin AFB has documented multiple RCW clusters along this route. The nearest cavity tree to the proposed area of disturbance is 35 ft from the edge of the RR 213 ROW. This cavity tree

appeared inactive at the time of the field survey on October 12 and 13, 2010. Eglin AFB has determined that construction activity, including land clearing, will not be allowed within 200 ft of cavity trees during the breeding season (April through July). Two areas have been identified through prior survey where construction would not be allowed during the breeding season (Clusters 907F and 907I, Figure 4-1). In addition, Eglin AFB will conduct a pre-construction survey of known and potential cavity trees in proximity to the Camp Rudder Line. Should any trees outside of Clusters 907F and 907I be determined to be used by breeding pairs within 200 ft of the area of construction disturbance, all work would be prohibited in those areas during the breeding season as well.

RCW habitat on Eglin AFB is assessed relative to habitat quality standards established through previous Section 7 consultation. The goal is for RCW clusters to occupy habitat that meets the Recovery Standard that has been established, indicating highest quality habitat. In addition to the Recovery Standard, Eglin AFB also has an RCW habitat quality designation of Managed Stability Standard, indicating that the habitat is of sufficient quality to minimally maintain an RCW cluster. Eglin AFB has developed a habitat model that identifies the RCW clusters on the installation, indicates their habitat quality, and projects how management activities, such as tree clearing, would affect habitat quality.

There are 10 RCW clusters that could be impacted by loss of foraging habitat from tree clearing under the Proposed Action. Through use of the Eglin AFB RCW foraging habitat model, it has been determined that seven of these clusters would not lose enough resources from proposed clearing to result in a significant change in habitat value from the current designation of Recovery Standard. The remaining three clusters are described in detail below.

Two clusters are below the Recovery Standard established for Eglin AFB, but the proposed clearing would not reduce the habitat quality to below the Managed Stability Standard. Therefore, removal of trees from these two clusters would result in minor impacts to habitat.

Cluster 907E along RR 213 is below the Managed Stability Standard and impacts to this cluster could adversely affect the RCW or its habitat. Therefore, Cluster 907E would be avoided during construction. The line would be re-routed through this area by placing it on the north or south side of RR 213 in the cleared ROW, which would avoid impacts to the foraging habitat in this cluster. This portion of the line would be constructed by trenching, if the arrangement of existing buried utility lines allows or by directionally boring beneath the cleared ROW along RR 213. If the route were relocated to the south side of the road, a directional bore would be used to cross the road at each end. There would be no tree removal in Cluster 907E, so there would be no impacts to RCW foraging habitat or cavity trees in this cluster.

Construction of the Camp Rudder Line would result in clearing an approximately 15-ft-wide strip of longleaf pine forest along the north side of RR 213 and the east side of RR 257, which does provide foraging habitat for this species. The total distance cleared would be approximately 8 miles, resulting in a loss of up to 14.7 acres of RCW foraging habitat. Tree removal along the proposed Camp Rudder Line route would be coordinated with Eglin AFB to avoid loss of nesting cavities and to minimize losses of foraging habitat. No work would occur during the breeding season (April through July) along the portions of the Camp Rudder Line where the route passes through Cluster 907E and within 200 ft of potential breeding cavities in Clusters 907F and 907I (Figure 4-1). In addition, Eglin AFB will conduct

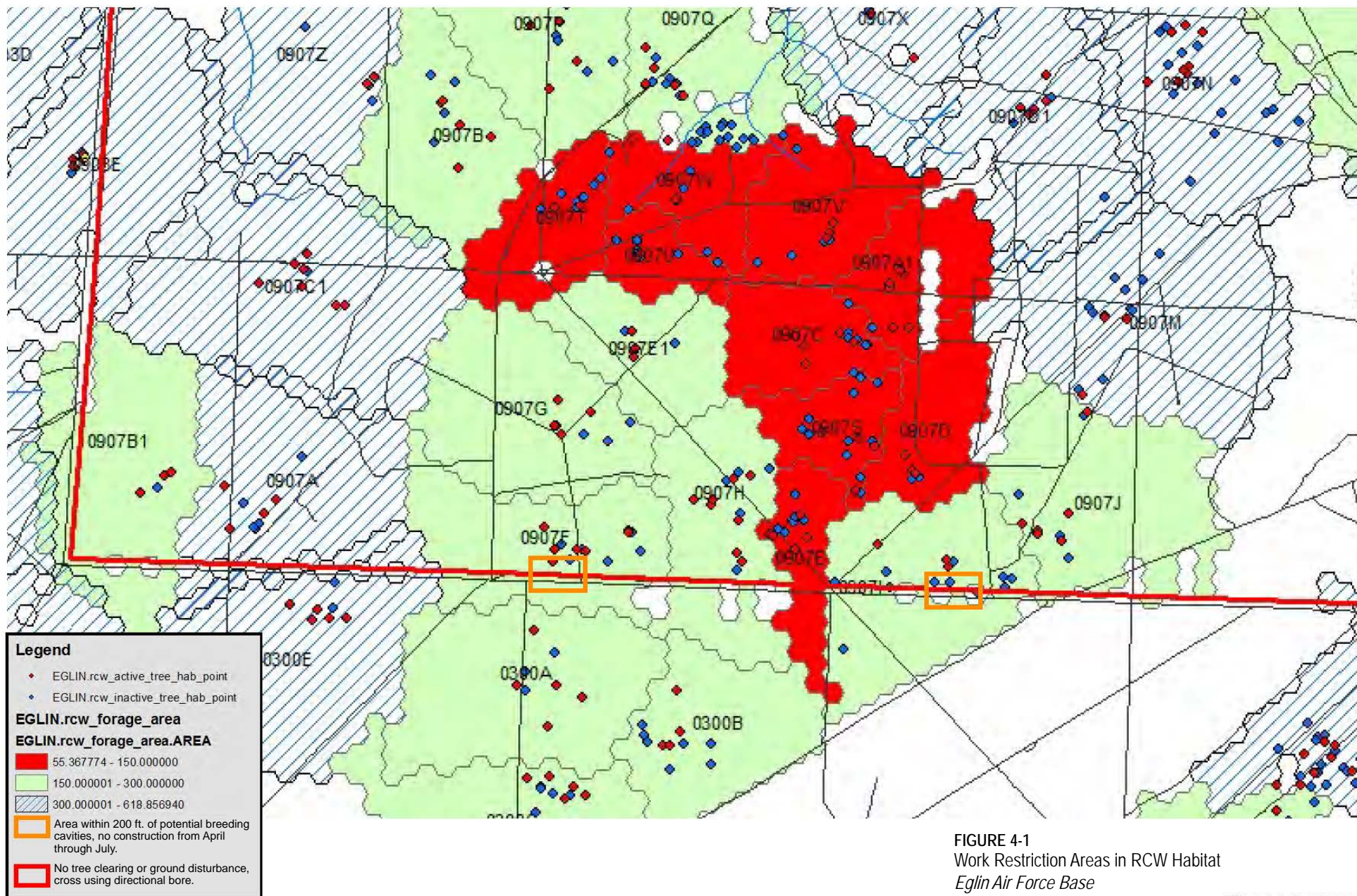


FIGURE 4-1
 Work Restriction Areas in RCW Habitat
 Eglin Air Force Base

a pre-construction survey of known and potential cavity trees in proximity to the Camp Rudder Line. Should any trees outside of Clusters 907F and 907I be determined to be used by breeding pairs within 200 ft of the area of construction disturbance, all work would be prohibited in those areas during the breeding season as well. The areas that will have construction restrictions due to RCW cavities or habitat will be shown on project plans and clearly identified in the field. This would avoid the potential for nest abandonment as a result of construction-related noise and disturbance. The construction contractor would receive a training briefing by Eglin NRB prior to work and would notify Eglin NRB should the species be encountered within or immediately adjacent to the work area during construction.

There are no known RCW cavity trees along or in proximity to the proposed Eglin Main Line route and the field survey conducted on October 12 and 13, 2010 confirmed that no cavity trees occur in areas that would be cleared. There is potentially suitable RCW foraging habitat along Eglin Main Line alternatives. However, this potential foraging habitat is not within the area that would be disturbed. No impacts to the RCW or its habitat would result from construction and operation of the Eglin Main Line. Because of the time that would elapse between the 2010 field reconnaissance and project construction, the project area would be surveyed again, approximately 60 days prior to the planned start of construction, by Eglin NRB staff to determine whether RCWs have made cavities in any trees within the project area. If any cavity trees are located that must be removed, additional consultation with the USFWS would be undertaken prior to project implementation. In addition, tree clearing and construction would not be conducted during the RCW nesting season (April through July) to avoid potential adverse impacts to breeding pairs from noise-related disturbance.

There is no suitable nesting or foraging habitat for the RCW at or adjacent to the two proposed lift station sites on the line to the APWRF. No impacts to the RCW or the species habitat would result from construction of these two lift stations. Because of the time that would elapse between the 2010 field reconnaissance and project construction, the project area would be surveyed again, approximately 60 days prior to the planned start of construction, by Eglin NRB staff to determine whether conditions have changed and potentially suitable RCW foraging habitat has developed in the area that would be disturbed. If any newly developed potentially suitable foraging habitat would be cleared, appropriate mitigation for these impacts would be determined and implemented. The construction contractor would receive a training briefing by Eglin NRB prior to work and would notify Eglin NRB should the species be encountered within or immediately adjacent to the work area during construction.

Because the fiber optic conduits would be installed in the same disturbed area as the wastewater lines, no additional impacts to the RCW or its habitat would result from installation of the fiber optic conduits.

The wastewater pipelines, lift stations, and fiber optic conduits would be regularly inspected and maintained after construction. No impacts to the RCW or its habitat would be expected from routine inspection and maintenance.

The potential for impacts would end when the project is complete and, other than cumulative loss of foraging habitat, there would be no potential for this project to then

interact with other projects with regard to impacts to the RCW. Because of the amount of RCW foraging habitat on Eglin AFB, the impact of cumulative foraging habitat loss to the RCW, as a result of the Proposed Action would likely be minimal and these cumulative impacts would result in a Not Likely to Adversely Affect habitat determination with regard to the Proposed Action. No other cumulative impact to this species would be expected.

Gopher Tortoise

Because of the time that would elapse between the 2010 field reconnaissance and project construction, the project area will be surveyed again, approximately 60 days prior to the planned start of construction, by Eglin AFB NRB staff to determine whether gopher tortoise continue to use habitat along this route, and whether there are any active burrows or other sensitive animals that are commensal with gopher tortoise within the project area. Should any active burrow be found within the project area, Eglin NRB would capture the tortoise by trapping and relocate it to nearby suitable habitat following the Eglin NRB standard procedures. The process of trapping and relocating gopher tortoise would follow FWC guidelines, including restrictions on cold weather relocations, and would likely take 30 days.

Each day during construction, the work area would be inspected prior to operation of any vehicles or equipment to determine whether gopher tortoise are in the work area. The trench would be inspected each morning to ensure that no gopher tortoise have become inadvertently trapped. The construction contractor would receive a training briefing by Eglin NRB prior to work and would notify Eglin NRB should the species be encountered within or immediately adjacent to the work area during construction. Any gopher tortoise found in the work area would be moved outside the construction area.

The areas proposed for the lift stations are on the existing wastewater line to the APWRF. No impacts to the gopher tortoise or the species habitat would result from construction of these two lift stations. As a precaution, the proposed lift station areas would be surveyed again immediately prior to construction. Should any gopher tortoise be found, they would be relocated.

The fiber optic conduits would be placed in the same area previously disturbed for the wastewater line. While there would be no new disturbed land, gopher tortoise could enter the work area. Daily monitoring for gopher tortoise would continue through the completion of installation of the fiber optic conduits and final soil stabilization. Any gopher tortoise found in the area would be managed the same as during construction of the wastewater lines.

The wastewater pipelines, lift stations, and fiber optic conduits would be regularly inspected and maintained after construction. No impacts to the gopher tortoise would be expected from routine inspection and maintenance.

The potential for impacts would end when the project is complete and there would be no potential for this project to then interact with other projects with regard to impacts to the gopher tortoise. Therefore, no cumulative impacts to the gopher tortoise would be expected.

Eastern Indigo Snake

Because of the similarity of appearance of the eastern indigo snake to other large black snakes, any dark snake would be treated as an eastern indigo snake unless positive identification can be made. If an eastern indigo snake is encountered on the work site, work must cease immediately and the snake must be allowed to leave the work area on its own. Any such incidents must be reported to the NRB as soon as possible. If possible, a photograph of the snake would be taken for confirmation of species. The snake would not be handled or harassed in any manner. Relocation of an eastern indigo snake would take place only if the snake is encountered during removal of a tortoise from a burrow, if the snake is in a location from which it would not move on its own, or if the work area is so large or obstructed that the snake cannot leave on its own. Because of the time that would elapse between the 2010 field survey and project construction, the project area will be surveyed again, approximately 60 days prior to the planned start of construction, by Eglin NRB staff to determine whether eastern indigo snake use any portion of the route within the project area.

Eglin AFB is authorized by USFWS to relocate one eastern indigo snake annually (basewide permit TE207027-0). It is not expected that any snakes would need to be relocated. Each day during construction, the work area would be inspected prior to operation of any vehicles or equipment to determine whether any eastern indigo snakes have entered the work area. The trench would be inspected each morning to ensure that no eastern indigo snakes have become inadvertently trapped. The construction contractor would receive a training briefing by Eglin NRB prior to work and would notify Eglin NRB should the species be encountered within or immediately adjacent to the work area during construction. The eastern indigo snake is extremely uncommon on Eglin AFB, with sighting of only 29 indigo snakes throughout Eglin AFB from 1956 to 1999, and no reported sightings since 1999.

The areas proposed for the lift stations on the existing wastewater line to the APWRF are not conducive to use by the eastern indigo snake. No impacts to the eastern indigo snake or the species habitat would result from construction of these two lift stations. As a precaution, the proposed lift station areas would be surveyed again immediately prior to construction. Should an eastern indigo snake be found, it would be relocated.

The fiber optic conduits would be placed in the same area previously disturbed for the wastewater lines. While there would be no new disturbed land, an eastern indigo snake could enter the work area. Daily monitoring for this species would continue through the completion of installation of the fiber optic conduits and final soil stabilization. Any eastern indigo snake found in the area would be managed as described for the wastewater lines.

The wastewater pipelines, lift stations, and fiber optic conduits would be regularly inspected and maintained after construction. No impacts to the eastern indigo snake would be expected from routine inspection and maintenance.

The potential for impacts would end when the project is complete and there would be no potential for this project to then interact with other projects with regard to impacts to the eastern indigo snake. Therefore, no cumulative impacts to the eastern indigo snake would be expected.

No Action Alternative: Under the No Action Alternative, no construction activity would occur at the site. There would be no change in existing conditions and no impacts to threatened or endangered species or their potential habitats.

4.2 Socioeconomic Resources

4.2.1 Land Use

Proposed Action: None of the land that would be used for wastewater lines, lift stations, and fiber optic conduits has potential for future economic development. Implementation of the Proposed Action is consistent with use of the area as an interstitial buffer for military activities. There would be no socioeconomic impacts related to land use.

No Action Alternative: Under the No Action Alternative, there would be no changes in existing conditions and no impacts to land use.

4.2.2 Utility Infrastructure

Proposed Action: The Proposed Action would improve telecommunications infrastructure and wastewater infrastructure on Eglin AFB with no adverse impacts to non-military utility infrastructure. Implementation of the Proposed Action would result in an upgrade of the existing wastewater treatment services through construction of new infrastructure using more effective technologies operated by OCWS. The new infrastructure would replace the old existing system that requires high maintenance efforts and would allow capacity for projected future increased demands.

The project would allow for expansion of telecommunications services in Camp Rudder and along the route of the Eglin Main Line by providing conduits to accommodate future installation of fiber optic lines.

Solid waste generated by the proposed project would not exceed the capacity of local and regional disposal areas.

Route selection minimized the potential for conflict with other utility infrastructure. The routes selected do not contain existing utility infrastructure that cannot be avoided during construction. No impacts to other utilities are expected.

No Action Alternative: Under the No Action Alternative, the wastewater infrastructure would remain as it is. The service area of the Camp Rudder and the Eglin Main Lines would continue to experience unreliable service. In conjunction with projected future growth in the service area, the deficiencies in the current system would result in negative impacts on the military mission.

4.2.3 Jobs and Employment

Proposed Action: The Proposed Action would have no short-term or long-term direct negative impacts on employment, housing, or base and county services. The local economy would experience a minor temporary positive impact during the construction phase of the project, because it would provide a few temporary jobs with associated secondary spending. The transfer of Eglin AFB wastewater treatment services to OCWS would have a positive impact on employment opportunities for the community through OCWS.

No Action Alternative: Under the No Action Alternative, conditions would remain as they are and no impacts to employment would result.

4.2.4 Recreation

Proposed Action: The proposed project areas are access-controlled and not always accessible by the public. No organized outdoor public recreation activities occur near the proposed project areas, so there would be no appreciable impacts to ongoing recreational activities on Eglin AFB. There would be no impact to camping, as there are no camping facilities in this area. Hunting would be unaffected as both construction and future maintenance activities would occur on or near roads and ROWs where hunting is prohibited by federal and state statute.

No Action Alternative: Under the No Action Alternative, no construction would occur and existing conditions would be maintained. There would be no recreation impacts.

4.2.5 Safety

Proposed Action: The construction sites and lift stations would be secured to prevent accidental entry by unauthorized users. The construction contractor will be required to have approved health and safety plans that will be implemented to protect workers during construction.

No safety impacts are expected to result from implementation of the Proposed Action.

No Action Alternative: Under the No Action Alternative, no construction activity would occur. There would be no safety issues.

4.3 Cumulative Impacts Summary

According to the CEQ regulations, the cumulative effects analysis in an EA should consider the potential environmental impacts resulting from the “incremental impacts of the action when added to other past, present, and reasonably foreseeable future actions, regardless of what agency (Federal or non-federal) or person undertakes such other actions” (40 CFR 1508.7).

One project adjacent to Eglin AFB, the flyover connection of SR 123 to SR 85, is being implemented in the vicinity of the proposed Eglin Main Line. Impacts from construction of the flyover project could interact with construction of the proposed pipeline through combined impacts to receiving waters. The flyover project drains to the same receiving water as a portion of the proposed Eglin Main Line. Appropriate BMPs will be used in the project areas to prevent runoff from leaving the site. In addition, it is expected that the Florida Department of Transportation would comply with laws and regulations for stormwater control through implementation and proper maintenance of appropriate BMPs to prevent stormwater runoff from impacting downstream waters from the flyover site (Eglin AFB, 2007). No significant interaction between these two projects is expected.

As discussed in Section 4.1.15.3, future projects that would result in loss of RCW habitat would have the potential to incrementally add to the loss that would result from the Proposed Action. However, because of the amount of RCW habitat in the region and the

small impact of the Proposed Action, any incremental contribution to loss of RCW habitat would likely be minor.

No other actions are foreseen that would lead to further cumulative impacts, since the majority of the Eglin Main Line and Camp Rudder Line routes are within portions of Eglin AFB that would not be developed in the foreseeable future.

4.4 Irreversible and Irretrievable Impacts

There are no irreversible or irretrievable impacts associated with the Proposed Action. Installing the wastewater pipelines would result in the long-term loss of up to 14.7 acres of upland longleaf pine forest along the Camp Rudder Line, and the long-term loss of approximately 0.5 acre of xeric hardwood forest between the pool area and the Camp Rudder WWTP. Up to 2.9 acres of mixed pine-hardwood forest and 3.2 acres of longleaf pine forest along the Eglin Main Line also would be cleared. This habitat, particularly along the Camp Rudder Line, would likely re-establish naturally over time outside of the maintained ROW. The area disturbed during construction would be re-graded after installation to restore original contours. Since the pipelines and fiber optic conduits would be buried, there would be no further obstacle to vegetation re-establishment for herbaceous and shrub species. Maintenance activities, such as periodic mowing, would preclude reforestation over the utility lines. The habitat loss would not be irreversible, as these areas would revert to native vegetation should the pipelines be abandoned.

The up to 14.7 acres of longleaf pine that would be cleared for the Camp Rudder Line also is RCW foraging habitat. Eglin AFB has over 300 active RCW clusters, which play an important role in regional recovery of this species. No cavity trees would be removed by the proposed project. No clearing of foraging habitat would occur that would result in degradation of any RCW cluster to a point that would adversely affect the species.

4.5 Compliance with State and Federal Statutes and Executive Orders

The Proposed Action was evaluated for compliance with all applicable state and federal environmental statutes and EOs. The project was found to be in compliance in all cases (Table 4-1).

In accordance with the Coastal Zone Management Act (CZMA), a determination of the proposed action was reviewed by the FDEP. Their concurrence with the CZMA determination was received February 23, 2012. This document describes guidelines under which the project must be completed to maintain consistency with Florida's statutes and regulations. A copy of this document can be provided by email if requested. Readers who have questions may contact Mr. Bob Miller, 96 CEG/CEVSNW, 883-1153.

In accordance with Section 7 of the ESA, a consultation with the United States Fish and Wildlife Service (USFWS) has been completed. Their concurrence with the Biological Assessment (BA) was received on March 31, 2011. This BA describes guidelines under which the project must be completed to minimize potential impacts to threatened and/or endangered species (Appendix D). A copy of this document can be provided by email if requested. OCWS will coordinate with Eglin Natural Resources Staff (Mr. Bob Miller, 96

CEG/CEVSNW, 883-1153) prior to any ground disturbance to complete protected species surveys.

4.6 Plans, Permits, and Environmental Management Requirements

4.6.1 Plans

The construction contractor will develop a project implementation plan that will clearly define those BMPs that would be implemented to minimize the potential for environmental impacts. This plan would protect and preserve valuable public resources. OCWS requires its contractors and subcontractors to assume responsibility for compliance with the environmentally regulated plans, specifications, permit requirements, and project-specific management practices defined in the construction contractor's scope of work.

OCWS will prepare construction plans that will address erosion control, including appropriate BMPs to protect surface waters during construction. An Engineering Inspector will oversee the work to make sure construction is in compliance with permit requirements. Prior to construction of the pipelines and lift stations, OCWS will submit a Joint Environmental Resource Permit from FDEP and USACE for the crossing of Garnier Creek and its tributary, pursuant to Chapter 62-343 of the FAC. Because the directional bore crossing beneath the streams would not require a CWA Section 404 permit from USACE, OCWS will request a letter from USACE concurring that no permit is required as part of the joint permit application. The Joint Environmental Resource Permit will be obtained prior to starting work and it will contain a Frac-Out Plan to be implemented in the event of an accidental release of drilling mud.

OCWS also will comply with the Eglin AFB requirements for working in or near RCW habitat. Although the loss of up to 14.7 acres is relatively minor given the amount of similar habitat present in the area, specific clusters could be affected. The OCWS construction contractor will follow the recommendations of the Eglin AFB management plan to further minimize any impacts of pine forest clearing on this species. No work would occur during the breeding season (April through July) along the portions of the Camp Rudder Line where the route passes through Cluster 907E and within 200 ft of potential breeding cavities in Clusters 907F and 907I (Figure 4-1). In addition, Eglin AFB will conduct a pre-construction survey of known and potential cavity trees in proximity to the Camp Rudder Line. Should any trees outside of Clusters 907F and 907I be determined to be used by breeding pairs within 200 ft of the area of construction disturbance, all work would be prohibited in those areas during the breeding season as well. The areas that will have construction restrictions due to RCW cavities or habitat will be shown on project plans and clearly identified in the field. Due to its sensitivity, Cluster 907E will be avoided by use of directional bore to avoid tree removal in Cluster 907E. The lift stations will require a minimal amount of land clearing, but the same restrictions would apply, if RCW use of the area is determined.

Surveys would occur along the proposed routes to identify burrows and relocate tortoises if necessary. Worksites would be inspected daily to determine whether gopher tortoise have entered the work area. Tortoises that enter the work area would be placed outside the work area.

TABLE 4-1

Federal Environmental Statutes and Executive Orders

Wastewater Pipelines Environmental Assessment, Eglin AFB, Florida

Statute/EO	Compliance Status	EA Action
Archaeological and Historic Preservation Act of 1974 (16 USC 469)	In compliance	A Phase I cultural resource survey of the proposed site was conducted. The results of this survey were provided to the SHPO and the SHPO responded with a concurrence letter agreeing with the findings (Appendix A).
Clean Air Act, as amended (42 USC 7401 et seq.)	In compliance	Minor fugitive dust from construction activity would not violate air quality standards. Mobile source emissions from construction equipment would be created by the Proposed Action. However, the construction period would be of short duration and the exhaust from construction equipment onsite would be minor compared to the typical traffic on SR 85 and SR 189.
CWA, as amended (33 USC 1251 et seq.)	In compliance	There would be no impact to wetlands or waters of the state as a result of construction or operation of the project. The pipelines will be installed using directional bore underneath the creeks and associated wetlands within the project area. This technique would not affect the flowing waters of the creeks.
Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (PL 96-510), as amended by the Superfund Amendments and Reauthorization Act of 1986 (PL 99-499)	In compliance	A search for contaminated sites was conducted (CH2M HILL, 2011) and none were identified. No hazardous materials would be associated with construction or operation of the project.
Coastal Zone Management Act (CZMA)	In compliance	A consistency review of this EA is presented in Appendix E, with the USAF's Consistency Determination under the CZMA, Section 307, and 15 CFR Part 930, Subpart C. The information in this Consistency Determination is provided pursuant to 15 CFR Section 930.39.
Endangered Species Act of 1973, as amended (16 USC 1531 et seq.)	In compliance	Installation of the Camp Rudder Line would result in loss of up to 14.7 acres of RCW habitat. A BA was completed for the project and concluded that the Proposed Action is unlikely to affect the RCW or its habitat. The construction contractor will follow the recommendations of the Eglin AFB management plan to further minimize any impacts of pine forest clearing on this species. A particularly sensitive RCW cluster (Cluster 907E) would be avoided by use of directional bore. No work would occur in the 700-ft section of the Camp Rudder Line adjacent to RCW cavity trees from April through July during the RCW nesting period. There will be no tree removal in Cluster 907E, so there would be no impacts to RCW foraging habitat or cavity trees in this cluster.

TABLE 4-1

Federal Environmental Statutes and Executive Orders

Wastewater Pipelines Environmental Assessment, Eglin AFB, Florida

Statute/EO	Compliance Status	EA Action
		<p>The eastern indigo snake also could be affected by construction. The worksites would be inspected daily to determine whether snakes have entered the work area. If an eastern indigo snake enters the work area, all work will cease until the snake leaves the work area on its own. All dark snakes will be treated as eastern indigo snakes unless positively identified. Eglin NRB developed a BA which determined that the Proposed Action is not likely to adversely affect the RCW or eastern indigo snake, and USFWS provided written concurrence with this conclusion.</p> <p>The construction contractor would receive a training briefing by Eglin NRB prior to work and would notify Eglin NRB should these species be encountered within or immediately adjacent to the work area during construction.</p>
Fish and Wildlife Coordination Act, as amended (16 USC 661, et seq.)	In compliance	Project areas were surveyed to determine whether sensitive species occurred within or adjacent to proposed construction areas. Measures described for the protection of protected species for compliance with the ESA will be implemented to minimize the potential for impact.
Migratory Bird Treaty Act	In compliance	No more than temporary displacement of migratory birds would result during construction. No impacts would occur during operation.
NEPA of 1969 (PL 91-190)	In compliance	This EA is being prepared in accordance with NEPA.
NHPA of 1966, as amended (16 USC 470 et seq.)	In compliance	A Phase I cultural resource survey of the proposed site was conducted. The results of this survey were provided to the SHPO and a concurrence letter was issued (Appendix A).
Noise Control Act of 1972, as amended	In compliance	No permanent noise impacts would occur. Noise impacts would be minimal and temporary, associated with construction and site maintenance activities.
Resource Conservation and Recovery Act (RCRA) (42 USC 6901 et seq.)	In compliance	<p>A search for contaminated sites was conducted, and none were identified. Furthermore, no hazardous materials would be associated with the construction or operation of the project.</p> <p>Should UXO be discovered, an emergency permit would be obtained under RCRA to implement appropriate disposition by qualified personnel (Chapter 62-730.320, Florida Administrative Code, Hazardous Waste).</p>

TABLE 4-1

Federal Environmental Statutes and Executive Orders

Wastewater Pipelines Environmental Assessment, Eglin AFB, Florida

Statute/EO	Compliance Status	EA Action
Solid Waste Disposal Act of 1965, as amended (including RCRA and amendments)	In compliance	No hazardous materials would be associated with the construction or operation of the project, and the project would receive no solid or hazardous waste either during construction or operation. All solid waste generated by the construction and equipment removal would be disposed of at an approved landfill facility.
Toxic Substances Control Act of 1976 (15 USC 2601 et seq.)	In compliance	A search for contaminated sites was conducted, and none were identified. Furthermore, no hazardous materials would be associated with the construction or operation of the project.
State of Florida Environmental Resources Permit (ERP) and related permits (Dredge and Fill /Wetlands Permit)	In compliance	Prior to construction, OCWS will submit a Joint Environmental Resource Permit application to FDEP and the U.S. Army Corps of Engineers (USACE) for the crossing of Garnier Creek and its tributary, pursuant to Chapter 62-343 of the FAC. This permit will contain a Frac-Out Plan that will be implemented in the event of a release of drilling mud. Implementation of the Frac-Out Plan for directional bore for construction of the Eglin Main Line will minimize the potential for immediate and downstream impacts to wetlands and aquatic habitats in the event of a release of drilling mud.
NPDES Stormwater Permit	In compliance	An application with an appropriate SWPPP would be filed as part of the pre-construction activities. The project design would account for any necessary stormwater management on the project (BMPs and controls).
Floodplain Management (EO 11988)	In compliance	Garnier Creek and the associated tributary on the Eglin Main Line are within the floodplain. However, no structures or buildings are in the area and there would be no change to topography, as the pipeline would be installed by directional bore under the floodplain, and original grade on adjacent land would be restored. Therefore, the project would not result in changes to flood elevations or frequency, or result in any new flood hazard.
Protection of Wetlands (EO 11990)	In compliance	There would be no impact to wetlands or waters of the state as a result of the construction or operation of the project. Worksites adjacent to wetlands would be enclosed within silt fencing to prevent runoff into jurisdictional waters. A Frac-Out Plan will be implemented in the event of a release of drilling mud.
Federal Compliance with Pollution Standards (EO 12088)	In compliance	The project would comply with all other applicable pollution laws.

The eastern indigo snake also could be affected by construction. Worksites would be inspected daily to determine whether snakes have entered the work area. If a snake enters the work area, all work will cease until the snake leaves the work area on its own. All dark snakes will be treated as eastern indigo snakes unless positively identified. The construction contractor would receive a training briefing by Eglin NRB prior to work and would notify Eglin NRB should this species be encountered within or immediately adjacent to the work area during construction.

OCWS must coordinate with Eglin Natural Resources Staff (Mr. Bob Miller, 96 CEG/CEVSNW, 883-1153) prior to any tree removal as trees may be merchantable.

4.6.2 Permits

OCWS will prepare construction plans that will address erosion control, including appropriate BMPs to protect surface waters during construction. An Engineering Inspector will oversee the work to make sure construction is in compliance with permit requirements.

Prior to construction of the pipelines and lift stations, OCWS will obtain an NPDES stormwater permit from FDEP, pursuant to Chapter 62-621 of the FAC. This NPDES permit will include a SWPPP. OCWS also will obtain a general permit for construction of a wastewater collection/transmission system from FDEP, pursuant to FAC 62-604.

Prior to construction of the pipelines and lift stations, OCWS will submit a Joint Environmental Resource Permit application from FDEP and USACE for the crossing of Garnier Creek and its tributary, pursuant to Chapter 62-343 of the FAC. Because the directional bore crossing beneath the streams would not require a CWA Section 404 permit from USACE, OCWS will request a letter from USACE concurring that no permit is required as part of the joint permit application. The Joint Environmental Resource Permit will be obtained prior to starting work and it will contain a Frac-Out Plan to be implemented in the event of an accidental release of drilling mud.

Should relocation of gopher tortoise, RCW, or commensal animals become necessary, the animals would be relocated by Eglin AFB NRB staff. No other permits would be required.

4.6.3 Environmental Management Requirements

The following impact avoidance measures would be implemented to minimize the potential for adverse environmental impacts.

1. OCWS would have a qualified biologist inspect the construction area for active use by gopher tortoise prior to initiating ground-disturbing activities or Eglin AFB NRB would conduct this task. Should any gopher tortoise be found in the work area, the tortoise would be moved outside the work area. Should any active burrows be discovered onsite or within 25 ft of the construction area, the tortoise would be live-trapped and relocated by Eglin NRB. Gopher tortoise relocation would require 1 month's notice. The construction contractor would receive a training briefing by Eglin NRB prior to work and would notify Eglin NRB should this species be encountered within or immediately adjacent to the work area during construction.
2. If an eastern indigo snake, or similar snake that cannot be positively identified, is encountered on the work site, work must cease immediately and the snake must be

allowed to leave the work area on its own. Any such incidents must be reported to the NRB as soon as possible. If possible, a photograph of the snake would be taken for confirmation of species. The snake would not be handled or harassed in any manner. Relocation of an eastern indigo snake would take place only if the snake is encountered during removal of a tortoise from a burrow, if the snake is in a location from which it would not move on its own, or if the work area is so large or obstructed that the snake cannot leave on its own. The construction contractor would receive a training briefing by Eglin NRB prior to work and would notify Eglin NRB should this species be encountered within or immediately adjacent to the work area during construction.

3. No work would occur during the breeding season (April through July) of the RCW along the portions of the Camp Rudder Line where the route passes through Cluster 907E and within 200 ft of potential breeding cavities in Clusters 907F and 907I (Figure 4-1). In addition, Eglin AFB will conduct a pre-construction survey of known and potential cavity trees in proximity to the Camp Rudder Line. Should any trees outside of Clusters 907F and 907I be determined to be used by breeding pairs within 200 ft of the area of construction disturbance, all work would be prohibited in those areas during the breeding season as well. The areas that will have construction restrictions due to RCW cavities or habitat will be shown on project plans and clearly identified in the field.
4. OCWS would have a qualified biologist inspect the construction area for any active RCW clusters prior to initiating ground-disturbing activities or Eglin NRB would conduct this task. If no RCWs or RCW cavities are found, construction would proceed. If new clusters are found, or the condition of existing clusters has changed, the project would be revised following coordination with Eglin NRB to assure that no adverse impacts to the RCW would occur. The construction contractor would receive a training briefing by Eglin NRB prior to work and would notify Eglin NRB should this species be encountered within or immediately adjacent to the work area during construction.
5. The Joint Environmental Resource Permit from FDEP will include a Frac-Out Plan to address accidental release of drilling mud during directional bore to place pipe or fiber optic conduits beneath streams.
6. Installation of the pipelines, lift stations, and fiber optic conduit would be fully coordinated with the Eglin AFB Range Operations Control Committee (ROCC) and the 46th Test Wing to ensure that features such as fencing, roads, vegetative barriers, etc., do not affect the Eglin mission. Coordination with the ROCC and 46th Test Wing would be accomplished by OCWS during initial site design and coordination with the ROCC would occur each construction day as the construction contractor enters and exits Eglin AFB.
7. Despite the conclusion of the NHPA Section 106 process, a minimal likelihood exists for inadvertent discovery of cultural resources not identified in planning for this project. During project construction, should there be inadvertent discovery of cultural resources (for example, physical materials appearing to be of archeological interest, human remains, etc.), such materials will be left in place, the area of discovery will be secured, and the Cultural Resources Manager at Eglin AFB will be immediately notified. Subsequent actions, as warranted, would be conducted under provisions of 36 CFR

§800.13, other applicable laws and regulations, and the Eglin AFB Integrated Cultural Resources Management Plan.

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5.0 List of Preparers

Rich Reaves/Environmental Scientist/18 years of experience/PhD

Jeremy Scott/Environmental Scientist/11 years of experience/Master of Science

Rosanne Prager/Environmental Scientist/30 years of experience/Bachelor of Science

Betsy Jorgensen/Environmental Scientist/7 years of experience/Bachelor of Science

Jennifer Karsner/Environmental Scientist/8 years of experience/Master of Science

Richa Srivastava/Water Resources Engineer/4 years of experience/ Master of Science

David Dunagan/Technical Editor/29 years of experience/Master of Arts

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6.0 List of Contacts

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Russell Brown 96 CEG/CEVCE

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Ted Hoehn, Florida Fish and Wildlife Conservation Commission

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Mindy Rogers, 96CEG/CEVSP

Lynn Shreve, Eglin Cultural Resource Manager

Bill Tate, USFWS

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APPENDIX A

Public and Agency Coordination and Comments

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CH2M HILL

1766 Sea Lark Lane

Navarre, FL 32566

850-939-8300

December 6, 2010

U.S. Fish and Wildlife Service
Northwest Florida Ecological Services Office
ATTN: Mr. Harold Mitchell
Panama City, Florida 32405

Dear Mr. Mitchell,

As part of the effort to privatize utility services on Eglin Air Force Base (AFB), Okaloosa County Water and Sewer (OCWS) proposes to construct two new wastewater conveyance pipelines on Eglin AFB (Figure 1). The new lines would connect with existing lines and would convey Eglin AFB wastewater to the OCWS Arbennie Pritchett Water Reclamation Facility (APWRF) in Fort Walton Beach. To minimize environmental disturbance, OCWS also would place fiber optic cable above the sewer lines. One of the proposed lines (Camp Rudder line) would be constructed between Camp Rudder and the existing force main serving the 7th Special Forces area (Eglin 7SFG), and the other (Eglin Main line) would be constructed in the Eglin main base cantonment area between the existing effluent main line from the Plew Sewage Treatment Plant (STP) and the existing Eglin 7SFG Force Main. The Plew STP line would be converted from a distribution line, which currently conveys effluent from the facility to the Eglin AFB spray irrigation fields into a raw sewage line. The land where the proposed lines would be constructed is owned by Eglin AFB. OCWS would obtain easements from Eglin AFB to construct and maintain the lines. OCWS would construct and maintain one new lift station on the Camp Rudder line and would construct two new lift stations on the existing line between where the Eglin Main line would connect with the 7 SFG Force main and the APWRF.

An Environmental Assessment (EA) is being prepared for this project. The following paragraphs describe the proposed action and also identify any alternatives under consideration. Your office will be provided with a copy of the EA for review later through the Florida Clearinghouse process.

The Camp Rudder line would be a 6-inch diameter line. The proposed route for the Camp Rudder line is depicted on Figure 2 and would originate at the Camp Rudder wastewater plant and follow an unpaved service road to the pool area. From the pool area, the route would continue generally west to Range Road (RR) 257, where it would follow the east side of RR 257 through the fenced area. Once outside the fenced area, the route would continue to follow the east side of RR 257 to its intersection with RR 213. From the intersection of RR 257 and RR 213, the route would follow the north side of RR 213 to RR 236. The line would be placed beneath RR 236 by directional bore and connect with the 7SFG Force Main. In addition to the new

wastewater line, a new lift station would be built between the pool area and the Camp Rudder wastewater plant. Where the route parallels RR 213 and RR 257, the line would be placed outside the existing cleared right-of-way (ROW). This would require clearing of up to 15 feet (ft) of longleaf pine (*Pinus palustris*) forest along these roads that would encroach into areas known to be used by the red-cockaded woodpecker (*Picoides borealis*). The proposed route would not result in removal of any cavity trees. No clearing would be required through Camp Rudder except for the section between the pool and the wastewater plant, where clearing of approximately 15 ft of hardwood forest would be required. An approximately 100-ft by 100-ft area, which would include the pipeline corridor, would be cleared for the proposed lift station. Three additional routes are under consideration for the Camp Rudder line, as depicted on Figure 2. These other routes have not previously been used for utility lines and all existing Camp Rudder utility service is provided along the proposed route.

Two alternatives are being carried forward in the EA for detailed analysis for construction of the Eglin Main line, denoted as Alternative A and Alternative B (Figure 3). The routes of the two alternatives coincide west of Garnier Creek and differ along their eastern portions. Under both alternatives, the Eglin Main line would be a 20-inch diameter line that would originate at the intersection of RR 236 and RR 636, which would be the connection point to the 7SFG Force Main. The route extends eastward through the middle of the Eglin AFB electric transmission ROW. The route continues eastward within the transmission ROW until intersecting a Gulf Power electric transmission easement east of Garnier Creek. The 20-inch diameter pipeline would be buried along the route. The pipeline would stay within the established ROW for this portion of the route and no forest clearing would result. This portion of the route crosses two perennial streams (Garnier Creek and an unnamed tributary of Garnier Creek), which would be crossed by directional bore beneath the stream bottom.

Alternative A continues along the Eglin powerline ROW to the northwest corner of the Eglin AFB spray irrigation fields. At this point, the route departs from the ROW and follows the western edge and then the southern edge of the spray irrigation fields to connect with the existing effluent main from the Plew STP between the two existing lagoons at the southeastern corner of the spray irrigation fields. Alternative B would follow the west side of the Gulf Power ROW south to General Robert W. Bond Boulevard. Alternative B would stay within previously cleared ROW to the extent practical, but portions of the route would require some clearing of forest vegetation along the west side of the ROW. Clearing of up to a 30-ft wide by 200-ft long area may be necessary around each Gulf Power transmission tower guy wire anchor. The route would then parallel the north side of General Robert W. Bond Boulevard to the northeast to connect with the effluent main from the Plew STP at State Route (SR) 85. Alternative B would include a directional bore under SR 85 to reach the tie-in with the Plew STP effluent main on the east side of the road. Additional alternatives considered for the Eglin Main line also are shown on Figure 3.

The two proposed lift stations along the route to the APWRF are shown on Figure 4. Because the locations of these stations are driven by topography and flow dynamics, other locations are not under consideration. These two locations are in generally developed areas along major roadways.

On October 13, 2010, CH2MHILL scientists, Dr. Rich Reaves (botanist) and Jeremy Scott (aquatic biologist) conducted a site investigation of the proposed pipeline corridors. The results of the walkover indicated that the proposed pipeline routes have been maintained as existing

Eglin AFB powerline corridors. No federal or state listed species were observed within the proposed project corridors during the reconnaissance; however, gopher tortoise (*Gopherus polyphemus*) activity (fresh tracks and abandoned burrows) was noted along the Eglin Main line corridor and red-cockaded woodpecker (*Picoides borealis*) cavities were located in proximity to the proposed Camp Rudder line corridor.

CH2M HILL is preparing the EA for this project. We respectfully request that you provide written concerns and recommendations for continuing with the proposed implementation of the wastewater conveyance lines with regard to imperiled species. If you have any questions about this letter or wish to discuss any concerns your agency has about this project, please contact Mr. Jeremy Scott at 850-939-8300, extension 38, or Dr. Rich Reaves at 678-530-4285.

Thank you for your anticipated cooperation.

Sincerely,

A handwritten signature in black ink, appearing to read 'JS' followed by a stylized flourish.

Jeremy Scott

cc: Brian Peck/U.S. Army Corps of Engineers, Mobile District
Melinda Rogers/CIV USAF AFMC 96 CEG/CEVSP



CH2M HILL

1766 Sea Lark Lane

Navarre, FL 32566

850-939-8300

December 6, 2010

Mr. Michael R. Jenkins, Plant Conservation Program Ecologist
Florida Division of Forestry, Forest Management Bureau
Plant Conservation
3125 Conner Blvd.
Tallahassee, Florida 32399-1650

Dear Mr. Jenkins,

As part of the effort to privatize utility services on Eglin Air Force Base (AFB), Okaloosa County Water and Sewer (OCWS) proposes to construct two new wastewater conveyance pipelines on Eglin AFB (Figure 1). The new lines would connect with existing lines and would convey Eglin AFB wastewater to the OCWS Arbennie Pritchett Water Reclamation Facility (APWRF) in Fort Walton Beach. To minimize environmental disturbance, OCWS also would place fiber optic cable above the sewer lines. One of the proposed lines (Camp Rudder line) would be constructed between Camp Rudder and the existing force main serving the 7th Special Forces area (Eglin 7SFG), and the other (Eglin Main line) would be constructed in the Eglin main base cantonment area between the existing effluent main line from the Plew Sewage Treatment Plant (STP) and the existing Eglin 7SFG Force Main. The Plew STP line would be converted from a distribution line, which currently conveys effluent from the facility to the Eglin AFB spray irrigation fields into a raw sewage line. The land where the proposed lines would be constructed is owned by Eglin AFB. OCWS would obtain easements from Eglin AFB to construct and maintain the lines. OCWS would construct and maintain one new lift station on the Camp Rudder line and would construct two new lift stations on the existing line between where the Eglin Main line would connect with the 7 SFG Force main and the APWRF.

An Environmental Assessment (EA) is being prepared for this project. The following paragraphs describe the proposed action and also identify any alternatives under consideration. Your office will be provided with a copy of the EA for review later through the Florida Clearinghouse process.

The Camp Rudder line would be a 6-inch diameter line. The proposed route for the Camp Rudder line is depicted on Figure 2 and would originate at the Camp Rudder wastewater plant and follow an unpaved service road to the pool area. From the pool area, the route would continue generally west to Range Road (RR) 257, where it would follow the east side of RR 257 through the fenced area. Once outside the fenced area, the route would continue to follow the east side of RR 257 to its intersection with RR 213. From the intersection of RR 257 and RR 213, the route would follow the north side of RR 213 to RR 236. The line would be placed beneath

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Alternative A continues along the Eglin powerline ROW to the northwest corner of the Eglin AFB spray irrigation fields. At this point, the route departs from the ROW and follows the western edge and then the southern edge of the spray irrigation fields to connect with the existing effluent main from the Plew STP between the two existing lagoons at the southeastern corner of the spray irrigation fields. Alternative B would follow the west side of the Gulf Power ROW south to General Robert W. Bond Boulevard. Alternative B would stay within previously cleared ROW to the extent practical, but portions of the route would require some clearing of forest vegetation along the west side of the ROW. Clearing of up to a 30-ft wide by 200-ft long area may be necessary around each Gulf Power transmission tower guy wire anchor. The route would then parallel the north side of General Robert W. Bond Boulevard to the northeast to connect with the effluent main from the Plew STP at State Route (SR) 85. Alternative B would include a directional bore under SR 85 to reach the tie-in with the Plew STP effluent main on the east side of the road. Additional alternatives considered for the Eglin Main line also are shown on Figure 3.

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Thank you for your anticipated cooperation.

Sincerely,

A handwritten signature in black ink, appearing to read 'JS' followed by a stylized flourish.

Jeremy Scott

cc: Brian Peck/U.S. Army Corps of Engineers, Mobile District
Melinda Rogers/CIV USAF AFMC 96 CEG/CEVSP



CH2M HILL

1766 Sea Lark Lane

Navarre, FL 32566

850-939-8300

December 6, 2010

Mr. Tim Breault
Florida Fish and Wildlife Conservation Commission
620 South Meridian Street
Tallahassee, FL 32399-1600

Dear Mr. Breault,

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Alternative A continues along the Eglin powerline ROW to the northwest corner of the Eglin AFB spray irrigation fields. At this point, the route departs from the ROW and follows the western edge and then the southern edge of the spray irrigation fields to connect with the existing effluent main from the Plew STP between the two existing lagoons at the southeastern corner of the spray irrigation fields. Alternative B would follow the west side of the Gulf Power ROW south to General Robert W. Bond Boulevard. Alternative B would stay within previously cleared ROW to the extent practical, but portions of the route would require some clearing of forest vegetation along the west side of the ROW. Clearing of up to a 30-ft wide by 200-ft long area may be necessary around each Gulf Power transmission tower guy wire anchor. The route would then parallel the north side of General Robert W. Bond Boulevard to the northeast to connect with the effluent main from the Plew STP at State Route (SR) 85. Alternative B would include a directional bore under SR 85 to reach the tie-in with the Plew STP effluent main on the east side of the road. Additional alternatives considered for the Eglin Main line also are shown on Figure 3.

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Melinda Rogers/CIV USAF AFMC 96 CEG/CEVSP



CH2M HILL
1766 Sea Lark Lane
Navarre, FL 32566-7472
TEL 850.939.8300
FAX 850.939.0035

January 3, 2011

Dr. Patti J. Anderson
Division of Plant Industry
Botany Section
P.O. Box 147100
Gainesville, Florida 32614-7100

Dear Dr. Anderson,

As part of the effort to privatize utility services on Eglin Air Force Base (AFB), Okaloosa County Water and Sewer (OCWS) proposes to construct two new wastewater conveyance pipelines on Eglin AFB (Figure 1). The new lines would connect with existing lines and would convey Eglin AFB wastewater to the OCWS Arbennie Pritchett Water Reclamation Facility (APWRF) in Fort Walton Beach. To minimize environmental disturbance, OCWS also would place fiber optic cable above the sewer lines. One of the proposed lines (Camp Rudder line) would be constructed between Camp Rudder and the existing force main serving the 7th Special Forces area (Eglin 7SFG), and the other (Eglin Main line) would be constructed in the Eglin main base cantonment area between the existing effluent main line from the Plew Sewage Treatment Plant (STP) and the existing Eglin 7SFG Force Main. The Plew STP line would be converted from a distribution line, which currently conveys effluent from the facility to the Eglin AFB spray irrigation fields into a raw sewage line. The land where the proposed lines would be constructed is owned by Eglin AFB. OCWS would obtain easements from Eglin AFB to construct and maintain the lines. OCWS would construct and maintain one new lift station on the Camp Rudder line and would construct two new lift stations on the existing line between where the Eglin Main line would connect with the 7 SFG Force main and the APWRF.

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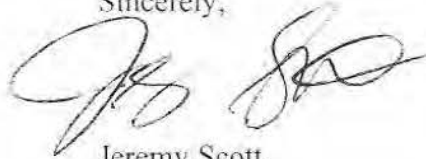
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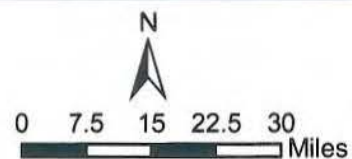
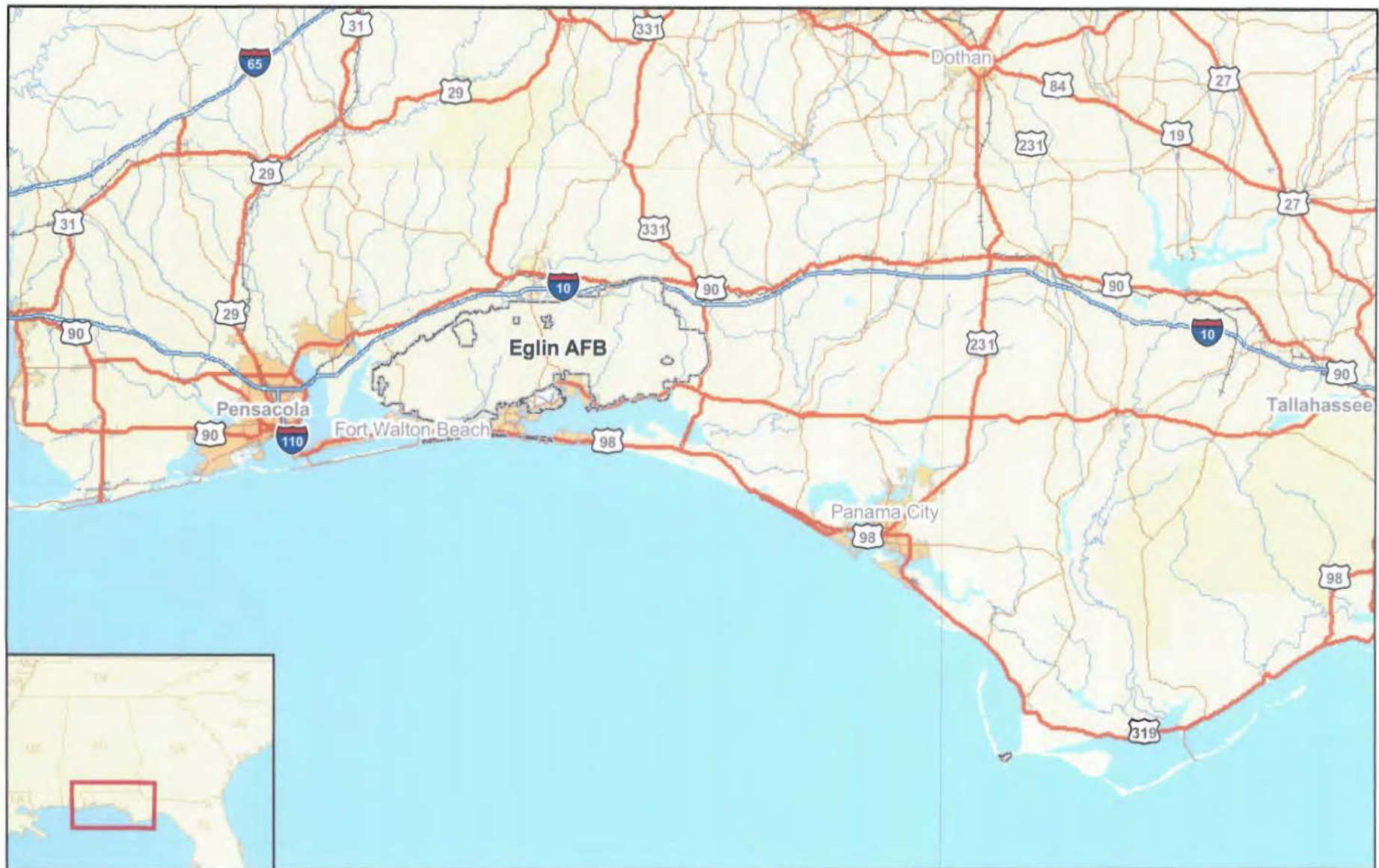
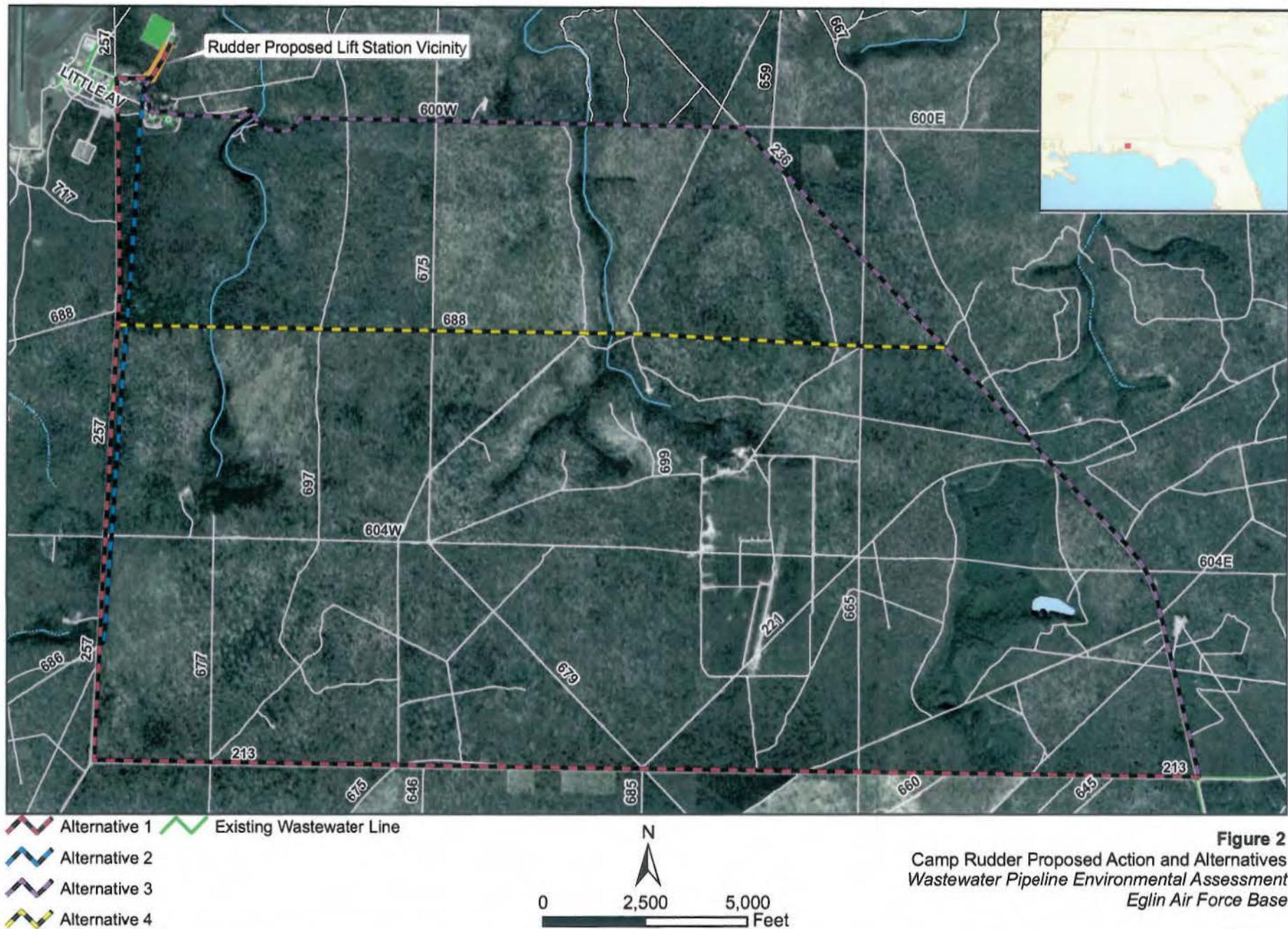


Figure 1
Location Map
Wastewater Pipeline Environmental Assessment
Eglin Air Force Base

CH2MHILL





- Alternative A Existing Wastewater Line
- Alternative B
- Alternative C

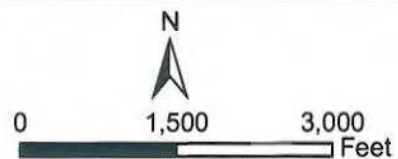
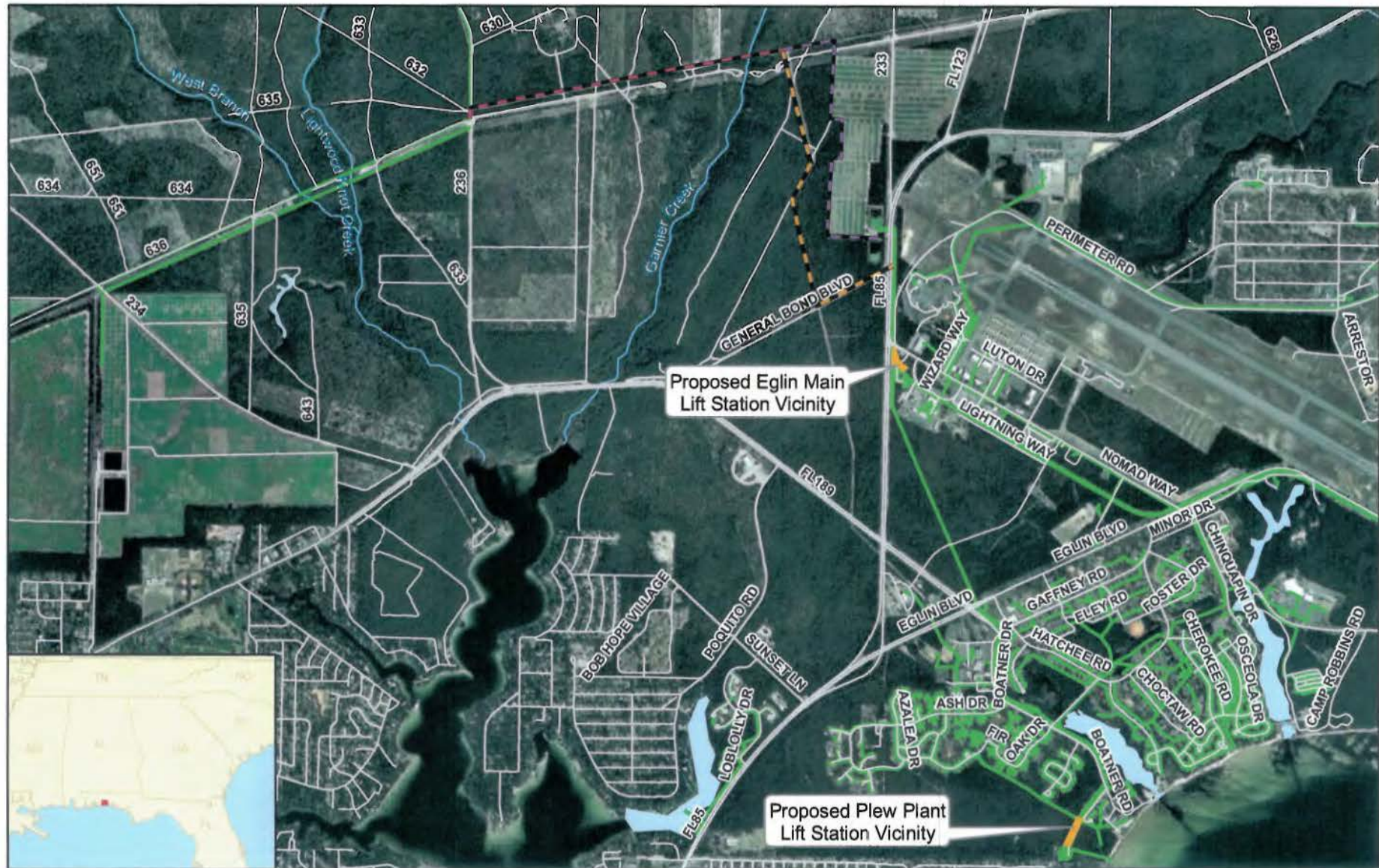


Figure 3
 Eglin Main Proposed Action and Alternatives
 Wastewater Pipeline Environmental Assessment
 Eglin Air Force Base



- Proposed Main Line
- Existing Wastewater Line
- Alignment 1
- Alignment 2
- Lift Station Vicinity

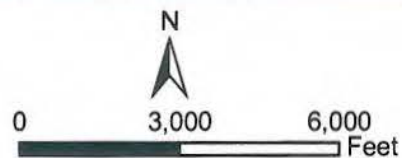


Figure 4
Proposed Eglin Lift Stations
Wastewater Pipeline Environmental Assessment
Eglin Air Force Base
CH2MHILL



CH2M HILL

1766 Sea Lark Lane

Navarre, FL 32566

850-939-8300

December 6, 2010

Mr. Michael R. Jenkins, Plant Conservation Program Ecologist
Florida Division of Forestry, Forest Management Bureau
Plant Conservation
3125 Conner Blvd.
Tallahassee, Florida 32399-1650

Dear Mr. Jenkins,

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CH2M HILL

1766 Sea Lark Lane

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December 6, 2010

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Florida Fish and Wildlife Conservation Commission
620 South Meridian Street
Tallahassee, FL 32399-1600

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The Camp Rudder line would be a 6-inch diameter line. The proposed route for the Camp Rudder line is depicted on Figure 2 and would originate at the Camp Rudder wastewater plant and follow an unpaved service road to the pool area. From the pool area, the route would continue generally west to Range Road (RR) 257, where it would follow the east side of RR 257 through the fenced area. Once outside the fenced area, the route would continue to follow the east side of RR 257 to its intersection with RR 213. From the intersection of RR 257 and RR 213, the route would follow the north side of RR 213 to RR 236. The line would be placed beneath RR 236 by directional bore and connect with the 7SFG Force Main. In addition to the new

wastewater line, a new lift station would be built between the pool area and the Camp Rudder wastewater plant. Where the route parallels RR 213 and RR 257, the line would be placed outside the existing cleared right-of-way (ROW). This would require clearing of up to 15 feet (ft) of longleaf pine (*Pinus palustris*) forest along these roads that would encroach into areas known to be used by the red-cockaded woodpecker (*Picoides borealis*). The proposed route would not result in removal of any cavity trees. No clearing would be required through Camp Rudder except for the section between the pool and the wastewater plant, where clearing of approximately 15 ft of hardwood forest would be required. An approximately 100-ft by 100-ft area, which would include the pipeline corridor, would be cleared for the proposed lift station. Three additional routes are under consideration for the Camp Rudder line, as depicted on Figure 2. These other routes have not previously been used for utility lines and all existing Camp Rudder utility service is provided along the proposed route.

Two alternatives are being carried forward in the EA for detailed analysis for construction of the Eglin Main line, denoted as Alternative A and Alternative B (Figure 3). The routes of the two alternatives coincide west of Garnier Creek and differ along their eastern portions. Under both alternatives, the Eglin Main line would be a 20-inch diameter line that would originate at the intersection of RR 236 and RR 636, which would be the connection point to the 7SFG Force Main. The route extends eastward through the middle of the Eglin AFB electric transmission ROW. The route continues eastward within the transmission ROW until intersecting a Gulf Power electric transmission easement east of Garnier Creek. The 20-inch diameter pipeline would be buried along the route. The pipeline would stay within the established ROW for this portion of the route and no forest clearing would result. This portion of the route crosses two perennial streams (Garnier Creek and an unnamed tributary of Garnier Creek), which would be crossed by directional bore beneath the stream bottom.

Alternative A continues along the Eglin powerline ROW to the northwest corner of the Eglin AFB spray irrigation fields. At this point, the route departs from the ROW and follows the western edge and then the southern edge of the spray irrigation fields to connect with the existing effluent main from the Plew STP between the two existing lagoons at the southeastern corner of the spray irrigation fields. Alternative B would follow the west side of the Gulf Power ROW south to General Robert W. Bond Boulevard. Alternative B would stay within previously cleared ROW to the extent practical, but portions of the route would require some clearing of forest vegetation along the west side of the ROW. Clearing of up to a 30-ft wide by 200-ft long area may be necessary around each Gulf Power transmission tower guy wire anchor. The route would then parallel the north side of General Robert W. Bond Boulevard to the northeast to connect with the effluent main from the Plew STP at State Route (SR) 85. Alternative B would include a directional bore under SR 85 to reach the tie-in with the Plew STP effluent main on the east side of the road. Additional alternatives considered for the Eglin Main line also are shown on Figure 3.

The two proposed lift stations along the route to the APWRF are shown on Figure 4. Because the locations of these stations are driven by topography and flow dynamics, other locations are not under consideration. These two locations are in generally developed areas along major roadways.

On October 13, 2010, CH2MHILL scientists, Dr. Rich Reaves (botanist) and Jeremy Scott (aquatic biologist) conducted a site investigation of the proposed pipeline corridors. The results of the walkover indicated that the proposed pipeline routes have been maintained as existing

Eglin AFB powerline corridors. No federal or state listed species were observed within the proposed project corridors during the reconnaissance; however, gopher tortoise (*Gopherus polyphemus*) activity (fresh tracks and abandoned burrows) was noted along the Eglin Main line corridor and red-cockaded woodpecker (*Picoides borealis*) cavities were located in proximity to the proposed Camp Rudder line corridor.

CH2M HILL is preparing the EA for this project. We respectfully request that you provide written concerns and recommendations for continuing with the proposed implementation of the wastewater conveyance lines with regard to imperiled species. If you have any questions about this letter or wish to discuss any concerns your agency has about this project, please contact Mr. Jeremy Scott at 850-939-8300, extension 38, or Dr. Rich Reaves at 678-530-4285.

Thank you for your anticipated cooperation.

Sincerely,

A handwritten signature in black ink, appearing to read 'JS' followed by a stylized flourish.

Jeremy Scott

cc: Brian Peck/U.S. Army Corps of Engineers, Mobile District
Melinda Rogers/CIV USAF AFMC 96 CEG/CEVSP



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January 7, 2011

Mr. Jeremy Scott
CH2M HILL
1766 Sea Lark Lane
Navarre, FL 32566-7472
Jeremy.Scott@CH2M.com

RE: Proposal, Eglin Air Force Base Wastewater Pipelines

Dear Mr. Scott:

The Division of Habitat and Species Conservation, Terrestrial Habitat Conservation and Restoration Section of the Florida Fish and Wildlife Conservation Commission (FWC) has coordinated our agency's review of the referenced proposal, and provides the following comments and recommendations.

Project Description

The proposed project would construct two new wastewater conveyance pipelines on Eglin Air Force Base (AFB). The new lines would connect with existing lines and would convey Eglin AFB wastewater to the Okaloosa County Water and Sewer's Arbennie Pritchett Water Reclamation Facility in Fort Walton Beach. One of the proposed lines (Camp Rudder line) would be constructed between Camp Rudder and the existing force main serving the 7th Special Forces area (Eglin 7SFG), and the second (Eglin Main line) would be constructed in the Eglin main base cantonment area between the existing effluent main line from the Plew Sewage Treatment Plant (STP) and the existing Eglin 7SFG Force Main. We understand that an Environmental Assessment (EA) is being prepared for this proposal.

Only one alternative was presented for the Camp Rudder line, though it is stated that three additional routes are under consideration. In the alternative described, clearing of up to 15 feet of longleaf pine forest along roads would be required. These areas are known to be used by the red-cockaded woodpecker; however, the proposed route would not result in the removal of any cavity trees. In addition, an approximately 100-ft by 100-ft area, including the pipeline corridor, would be cleared for a proposed lift station. All existing Camp Rudder utility service is provided along the proposed route. The letter we received states that the 3 additional routes under consideration would occur in areas that have not previously been used for utility lines.

For the Eglin Main line, two alternatives (A and B) are being carried forward in the EA for detailed analysis. Under both alternatives, for the first portion of the route, the Eglin Main line would be a 20-inch diameter line that would be buried along the route. The pipeline would stay within the established right-of-way (ROW) for this portion and no forest clearing would be necessary. The pipeline would cross Garnier Creek and an unnamed tributary of Garnier Creek by directional bore beneath the stream bottom.

Alternative A continues along the Eglin powerline ROW before departing to follow the western edge and then the southern edge of the Eglin AFB spray irrigation fields to connect with the existing effluent main from the Plew STP. Alternative B would follow the west side of the Gulf Power ROW and stay within the previously cleared ROW to the extent practical. However, clearing of up to a 30-ft wide by 200-ft long area may be necessary around each Gulf Power transmission tower guy wire anchor. This alternative would also require a directional bore under SR 85 to reach the tie-in with the Plew STP effluent main.

Mr. Jeremy Scott

Page 2

January 7, 2011

Affected Resources

Query of the Environmental Resource Analysis database indicated the following state-listed species (Chapter 68A-27, Florida Administrative Code, Rules Relating to Endangered or Threatened Species) have been documented within the vicinity of the project area: red-cockaded woodpecker (*Picoides borealis*, Federal Endangered), eastern indigo snake (*Drymarchon corais couperi*, Federal Threatened), gopher frog (*Rana areolata*, State Species of Special Concern), pine barrens tree toad (*Hyla andersonii*, State Species of Special Concern), and Florida pine snake (*Pituophis melanoleucus mugitus*, State Species of Special Concern).

The Camp Rudder portion of the project contains potential habitat for eastern indigo snakes, alligator snapping turtles (*Macrolemys temminckii*, State Species of Special Concern), gopher tortoises (*Gopherus polyphemus*, State Threatened), gopher frogs, reticulated flatwoods salamanders (*Ambystoma bishopi*, Federal Endangered), southeastern American kestrels (*Falco sparverius paulus*, State Threatened), red-cockaded woodpeckers, and Florida black bears (*Ursus americanus floridanus*, State Threatened). This portion of the project also falls within the primary range of the Eglin black bear and within the red-cockaded woodpecker consultation area. In addition, rarefish drainages for bluenose shiner (*Pteronotropis welaka*, State Species of Special Concern), gulf sturgeon (*Acipenser oxyrinchus desotoi*, Federal Threatened), and Okaloosa darter (*Etheostoma okaloosae*, Federal Endangered) occur within the project area.

The Eglin Main portion of the project contains potential habitat for eastern indigo snakes, gopher tortoises, gopher frogs, flatwoods salamanders, southeastern American kestrels, red-cockaded woodpeckers, and Florida black bears. This area is also completely within the red-cockaded woodpecker consultation area and falls within the primary range of the Florida black bear.

Recommendations

The Eglin AFB Integrated Natural Resources Management Plan (INRMP) provides interdisciplinary strategic guidance for natural resources management. Though all alternatives under consideration were not described in the letter we received, we recommend that any species-specific Management Objectives within the INRMP and/or the Threatened and Endangered Species Component Plan to the INRMP be addressed through the EA. In addition, we encourage the use of alternatives that utilize existing ROWs and require the least amount of land clearing. If land clearing is necessary, we encourage alternatives closest to existing areas of already disturbed habitats, as this would greatly reduce the possibility of increased fragmentation of important sandhill and flatwoods habitats.

We recommend that a systematic survey for gopher tortoises be conducted in the immediate area of the proposed route before land clearing and construction occur. If any gopher tortoises or burrows are found, we recommend the tortoises be relocated out of the area per FWC permit #WR05399. Consideration should also be given to gopher tortoise commensal species which utilize gopher tortoise burrows, such as the gopher frog, indigo snake, and pine snake.

We also recommend that surveys be conducted for undocumented red-cockaded woodpecker cavities prior to any trees being removed within the area of the Camp Rudder line corridor and appropriate mitigation measures be conducted if necessary. Additionally, as these areas are located within the red-cockaded woodpecker consultation area, a Section 7 consultation will be necessary.

The Okaloosa darter is endemic to small to moderate-sized streams within the Choctawhatchee Bay system. Its current range is limited to six tributary systems in Okaloosa and Walton counties. Ninety-four percent of the drainage area of these streams is on Eglin AFB (Jelks and Alam 1981). The biggest threat to Okaloosa darters is habitat degradation through erosion and sedimentation, which deteriorate water quality of streams (Hoehn 1998). Although Okaloosa darter populations are seemingly stable, given the limited range of this species (Jelks and Alam 1981), any habitat degradation could negatively impact the species. Therefore, we recommend

that all Best Management Practices for erosion control, directional drilling, and monitoring are strictly adhered to in order to prevent damage to these streams that may contain listed species. Further, we recommend that the Air Force consider revegetating stream slopes after completion of directional drilling activities to better manage against water quality impacts due to sedimentation.

Should other listed species be encountered prior to or during construction or if the project can reasonably be expected to result in take (defined as disturbance of reproductive activities, harm, or capture) of state-listed species, their nests, or eggs, we recommend that the Air Force examine our website <http://myfwc.com/permits/Protected-Wildlife/> for information on permit application requirements, and contact the FWC's Wildlife Permit Coordinator within the Division of Habitat and Species Conservation with specific permitting questions.

We appreciate the opportunity to comment on this proposal. If we can be of further assistance in developing and implementing the proposal, please contact Mr. Paul Scharine at 850-627-1773 x107 or by email at paul.scharine@myfwc.com.

Sincerely,



Michael B. Brooks
Section Leader
Terrestrial Habitat Conservation & Restoration Section

jw/ps

ENV 1

cc: Richard Reaves, CH2M HILL, Richard.Reaves@CH2M.com

Referenced Literature

Hoehn, T. 1998. Rare and Imperiled Species of Florida: A Watershed Perspective. Florida Fish and Wildlife Conservation Commission.

Jelks, H. and S. Alam. 1981. Recovery Plan for Okaloosa Darter (*Etheostorna okaloosae*). U.S. Fish and Wildlife Service.



DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 96TH AIR BASE WING (AFMC)
EGLIN AIR FORCE BASE, FLORIDA

09 AUG 2011

Maria D. Rodriguez
Chief, Environmental Stewardship Branch
96 CEG/CEVS
501 Deleon Street, Suite 101
Eglin AFB FL 32542-5105

JuDee L. Dawkins, Interim Director
Division of Historical Resources
R.A. Gray Building
500 South Bronough Street
Tallahassee FL 32399-0250

Dear Ms. Dawkins

Enclosed with this letter is a copy of the report *Cultural Resources Survey of X-1098, X-1099, X-1100 & X-1101 for the Eglin Wastewater Treatment Facility Project Cultural Resources Management Support, Eglin Air Force Base, Okaloosa, County, Florida*, produced by Prentice Thomas and Associates, Inc. for CH2M Hill.

The work at X-1098 resulted in the identification of one new site, 8OK2792. In addition, the boundaries of a previously known site, 8OK1088, were expanded west into the survey tract.

Work at X-1099 resulted in the identification of two new sites, 8OK2793 and 8OK2794, and one archaeological occurrence.

Work at X-1100 resulted in the identification of three sites (8OK2795, 8OK2796 & 8OK2797) and seven archaeological occurrences.

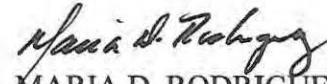
Work at X-1101 resulted in the identification of one new site 8OK2798 and two archaeological occurrences as well as the expansion of the boundaries of a previously known site, 8OK1894.

The archaeological occurrences are categorically ineligible and all the sites have been evaluated as ineligible for nomination to the *National Register of Historic Places*. No further work is recommended for these sites and within the survey tracts. Eglin concurs with the findings of the investigation.

With this letter Eglin is notifying you, as required by Section 106 of the *National Historic Preservation Act*, that it has located all cultural resources within the area of investigation. If your office does not respond within 30 days, it is assumed you concur with the determinations and recommendations in the report.

Eglin is again pleased to work with you in protecting the cultural resources of the Base and the state of Florida. Should you have any questions regarding the report, please contact my representative, Lynn Shreve at 850-883-5201.

Sincerely



MARIA D. RODRIGUEZ, GS-14
Chief, Environmental Stewardship Branch

9 Attachments:

1. Report
2. Document Checklist
3. Eight Site Forms
4. Survey Log Sheet
5. SmartForm CD
6. Disk Submission Form
7. Large-scale Plot Map
8. Table of Concordance
9. GIS File CD



FLORIDA DEPARTMENT OF STATE

Kurt S. Browning

Secretary of State

DIVISION OF HISTORICAL RESOURCES

Ms. Maria Rodriguez
Chief, Environmental Stewardship Branch
96 CEG/CEVH
501 Deleon St., Suite 101
Eglin AFB, FL 32542-5105

September 13, 2011

Re: DHR Project File No.: 2011-03446 / Received by DHR: August 15, 2011
*Cultural Resources Survey of X-1098, X-1099, X-1100, & X-1101 for the Eglin
Wastewater Treatment Facility Project, Contract #W91278-08-D-0015, (Task Order CR-
10-0065), Cultural Resources Management Support, Eglin Air Force Base, Okaloosa
County, Florida*

Dear Ms. Rodriguez:

Our office received and reviewed the above referenced survey report in accordance with Sections 106 and 110 of the *National Historic Preservation Act of 1966* (Public Law 89-665), as amended in 1992; *36 C.F.R., Part 800: Protection of Historic Properties*; and Chapter 267, *Florida Statutes*, for assessment of possible adverse impact to cultural resources (any prehistoric or historic district, site, building, structure, or object) listed, or eligible for listing, in the *National Register of Historic Places (NRHP)*.

Between December 2010 and January 2011, Prentice Thomas and Associates, Inc. (PTA) conducted an archaeological and historical cultural resources survey of the X-1098, X-1099, X1100, and X-1101 units on behalf of CH3MHill and the U.S. Air Force. PTA identified two previously recorded archaeological sites (8OK1088 and 8OK1894), seven previously unrecorded archaeological sites (8OK2792 – 8OK2798), and ten archaeological occurrences within the project areas during the investigation.

PTA determined that the archaeological sites within the project area have a low density of artifacts, minimal diagnostic artifacts, and low research potential. PTA found that none meets minimum criteria for listing in the NRHP.

PTA determined that undertakings within the X-1098, X-1099, X-1100, and X1101 survey units will have no effect on cultural resources listed, or eligible for listing, in the NRHP. PTA recommends no further investigation of units X-1098, X-1099, X-1100 and X1011.

500 S. Bronough Street • Tallahassee, FL 32399-0250 • <http://www.flheritage.com>

☐ Director's Office
850.245.6300 • FAX: 245.6436

☐ Archaeological Research
850.245.6444 • FAX: 245.6452

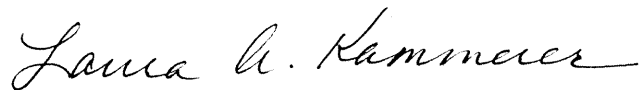
☒ Historic Preservation
850.245.6333 • FAX: 245.6437

Ms. Rodriguez
September 13, 2011
Page 2

Based on the information provided, our office concurs with the determinations of the U.S. Air Force and finds the submitted report complete and sufficient in accordance with Chapter 1A-46, *Florida Administrative Code*.

If you have any questions concerning our comments, please contact Rudy Westerman, Historic Preservationist, by phone at 850.245.6333, or by electronic mail at rjwesterman@dos.state.fl.us. Your continued interest in protecting Florida's historic properties is appreciated.

Sincerely,

A handwritten signature in cursive script, reading "Laura A. Kammerer".

Laura A. Kammerer
Deputy State Historic Preservation Officer
For Review and Compliance

Xc: Prentice Thomas and Associates, Inc. – Mary Esther, Florida

APPENDIX B

List of Protected Species Known to Occur in the Project Area

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FEDERAL THREATENED, ENDANGERED,
AND OTHER SPECIES OF CONCERN LIKELY TO OCCUR IN
OKALOOSA COUNTY FLORIDA
Compiled by the U.S. Fish and Wildlife Service July 2011

Common Name	Scientific Name	State Status	FWS Status	Natural Communities
FISH:				
Gulf sturgeon	<i>Acipenser oxyrinchus desotoi</i>	SSC	T CH	ESTUARINE: various MARINE: various habitats RIVERINE: alluvial and blackwater streams
Okaloosa darter	<i>Etheostoma okaloosae</i>	E	T	RIVERINE: seepage stream
Saltmarsh topminnow	<i>Fundulus jenkinsi</i>	SSC		ESTUARINE: estuarine tidal marsh
Bluenose shiner	<i>Pteronotropis welaka</i>	SSC		RIVERINE: blackwater, alluvial, and spring-run streams
AMPHIBIANS & REPTILES:				
Reticulated flatwoods salamander	<i>Ambystoma bishopi</i>	SSC	E CH	PALUSTRINE: wet flatwoods, dome swamp, basin swamp, TERRESTRIAL: mesic flatwoods (reproduces in ephemeral wetlands within this community)
Loggerhead turtle	<i>Caretta caretta</i>	T	T	TERRESTRIAL: sandy beaches; nesting
Green turtle	<i>Chelonia mydas</i>	E	E	TERRESTRIAL: sandy beaches; nesting
Leatherback turtle	<i>Dermochelys coriacea</i>	E	E	TERRESTRIAL: sandy beaches; nesting
Eastern indigo snake	<i>Drymarchon couperi</i>	T	T	ESTUARINE: tidal swamp PALUSTRINE: hydric hammock, wet flatwoods TERRESTRIAL: mesic flatwoods, upland pine forest, sandhills, scrub, scrubby flatwoods, rockland hammock, ruderal
Hawksbill turtle	<i>Eretmochelys imbricata imbricata</i>	E	E	MARINE: open water; no nesting
Kemp's ridley turtle	<i>Lepidochelys kempii</i>	E	E	TERRESTRIAL: sandy beaches; nesting
Coal skink	<i>Eumeces anthracinus</i>		ce	PALUSTRINE: seepage slope, baygall TERRESTRIAL: upland pine forest, upland hardwood forest, mesic flatwoods
Gopher tortoise	<i>Gopherus polyphemus</i>	SSC	ce	TERRESTRIAL: sandhills, scrub, scrubby flatwoods, xeric hammocks, coastal strand, ruderal
Pine barrens treefrog	<i>Hyla andersonii</i>	SSC		PALUSTRINE: seepage slope, baygall RIVERINE: seepage stream
Alligator snapping turtle	<i>Macrolemys temminckii</i>	SSC	ce	ESTUARINE: tidal marsh LACUSTRINE: river floodplain lake, swamp lake RIVERINE: alluvial stream, blackwater stream
Florida pine snake	<i>Pituophis melanoleucus mugitus</i>	SSC	ce	LACUSTRINE: ruderal, sandhill upland lake TERRESTRIAL: sandhill, scrubby flatwoods, xeric hammock, ruderal
Florida bog frog	<i>Rana okaloosae</i>	SSC	ce	PALUSTRINE: seepage slope, baygall RIVERINE: seepage slope, seepage stream
BIRDS:				
Red knot	<i>Calidris canutus</i>		C	ESTUARINE: exposed unconsolidated substrate MARINE: exposed unconsolidated substrate

E=endangered, T=threatened, P=proposed, C=candidate, s/a=similar appearance, SSC=species of special concern, ce=consideration encouraged, CH=Critical Habitat, p=proposed, BGEPA=Bald and Golden eagle protection act

This is not an exhaustive list of where species do occur, but a guide to indicate areas that might require surveys if appropriate habitat exists. Please contact Florida Natural Areas Inventory (850-224-8207) for additional species location information.

FEDERAL THREATENED, ENDANGERED,
AND OTHER SPECIES OF CONCERN LIKELY TO OCCUR IN
OKALOOSA COUNTY FLORIDA
Compiled by the U.S. Fish and Wildlife Service July 2011

Common Name	Scientific Name	State Status	FWS Status	Natural Communities
				TERRESTRIAL: dunes, sandy beaches, and inlet areas. Mostly wintering and migrants.
Piping plover	<i>Charadrius melodus</i>	T	T CH	ESTUARINE: exposed unconsolidated substrate MARINE: exposed unconsolidated substrate TERRESTRIAL: dunes, sandy beaches, and inlet areas. Mostly wintering and migrants.
Bald eagle	<i>Haliaeetus leucocephalus</i>		BGEPA	ESTUARINE: marsh edges, tidal swamp, open water LACUSTRINE: swamp lakes, edges PALUSTRINE: swamp, floodplain RIVERINE: shoreline, open water TERRESTRIAL: pine and hardwood forests, clearings
Wood stork	<i>Mycteria americana</i>	E	E	ESTUARINE: marshes LACUSTRINE: floodplain lakes, marshes (feeding), various PALUSTRINE: marshes, swamps, various
Red-cockaded woodpecker	<i>Picoides borealis</i>	SSC	E	TERRESTRIAL: mature pine forests
Bachman's sparrow	<i>Aimophila aestivalis</i>		ce	TERRESTRIAL: various, ruderal
Southeastern snowy plover	<i>Charadrius alexandrinus tenuirostris</i>	T	ce	ESTUARINE: exposed unconsolidated substrate MARINE: exposed unconsolidated substrate TERRESTRIAL: dunes, sandy beaches, and inlet areas
Marian's marsh wren	<i>Cistothorus palustris marianae</i>	SSC		ESTUARINE: tidal marsh MARINE: tidal marsh
Stoddard's yellow-throated warbler	<i>Dendroica dominica stoddardi</i>		ce	TERRESTRIAL: wooded habitats with spanish moss, various
Little blue heron	<i>Egretta caerulea</i>	SSC		ESTUARINE: marshes, shoreline PALUSTRINE: floodplains, swamps RIVERINE: shoreline
Snowy egret	<i>Egretta thula</i>	SSC		ESTUARINE: marshes, tidal swamps, shoreline LACUSTRINE: lake edges PALUSTRINE: swamp, floodplain, ruderal RIVERINE: shoreline
Tricolored heron	<i>Egretta tricolor</i>	SSC		ESTUARINE: marshes, tidal swamps, shoreline LACUSTRINE: lake edges PALUSTRINE: swamp, floodplain, ruderal RIVERINE: shoreline
Arctic peregrine falcon	<i>Falco peregrinus tundrius</i>	E	ce	ESTUARINE: winters along coasts LACUSTRINE: various PALUSTRINE: various TERRESTRIAL: various, ruderal
Southeastern kestrel	<i>Falco sparverius paulus</i>	T	ce	ESTUARINE: various habitats PALUSTRINE: various habitats TERRESTRIAL: open pine forests, clearings, ruderal, various
American oystercatcher	<i>Haematopus palliatus</i>	SSC		ESTUARINE: exposed unconsolidated substrate, exposed mollusk reef MARINE: exposed unconsolidated substrate, exposed mollusk reef TERRESTRIAL:

E=endangered, T=threatened, P=proposed, C=candidate, s/a=similar appearance, SSC=species of special concern, ce=consideration encouraged, CH=Critical Habitat, p=proposed, BGEPA=Bald and Golden eagle protection act

This is not an exhaustive list of where species do occur, but a guide to indicate areas that might require surveys if appropriate habitat exists. Please contact Florida Natural Areas Inventory (850-224-8207) for additional species location information.

FEDERAL THREATENED, ENDANGERED,
AND OTHER SPECIES OF CONCERN LIKELY TO OCCUR IN
OKALOOSA COUNTY FLORIDA
Compiled by the U.S. Fish and Wildlife Service July 2011

Common Name	Scientific Name	State Status	FWS Status	Natural Communities
				beaches, ruderal areas
Brown pelican	<i>Pelecanus occidentalis</i>	SSC		ESTUARINE: islands for nesting, open water MARINE: open water
Black skimmer	<i>Rynchops niger</i>	SSC		ESTUARINE: various LACUSTRINE: various RIVERINE: various TERRESTRIAL: ocean beaches, beach dune, ruderal. Nests common on rooftops.
Least tern	<i>Sterna antillarum</i>	T		ESTUARINE: various LACUSTRINE: various RIVERINE: various TERRESTRIAL: beach dune, ruderal. Nests common on rooftops.
MAMMALS:				
Choctawhatchee beach mouse	<i>Peromyscus polionotus allophrys</i>	E	E CH	TERRESTRIAL: beach dune, coastal scrub. Bay Co.: St. Andrew State Rec. Area mainland (CH) and Shell Island (CH), Tyndall Air Force Base Shell Island (CH). Walton Co.: Grayton Beach State Rec. Area (main CH & western units), Topsail Hill State Preserve (CH), Deer Lake State Park, Camp Creek, Four-Mile Village, Town of Grayton Beach and Seagrove Beach, Seaside. Okaloosa Co. historic range.
West Indian manatee	<i>Trichechus manatus latirostris</i>	E	E	ESTUARINE: submerged vegetation, open water MARINE: open water, submerged vegetation RIVERINE: alluvial stream, blackwater stream, spring-run stream
Santa Rosa beach mouse	<i>Peromyscus polionotus leucocephalus</i>		ce	TERRESTRIAL: beach dune, coastal scrub
Southeastern big-eared bat	<i>Plecotus rafinesquii</i>		ce	PALUSTRINE: various, floodplains TERRESTRIAL: pine and hardwood forests, ruderal, various
Eastern chipmunk	<i>Tamias striatus</i>	SSC		TERRESTRIAL: slope forest, upland hardwood forest, upland pine forest
Florida black bear	<i>Ursus americanus floridanus</i>	T	ce	PALUSTRINE: titi swamps, floodplains TERRESTRIAL: pine and hardwood forests
INVERTEBRATES:				
Narrow pigtoe (mussel)	<i>Fusconaia escambia</i>		C	Riverine: small to medium-sized creeks and rivers with slow to moderate current over gravel, and gravel mixed with sand or some silt. Endemic to the Escambia and Yellow River drainages of Alabama and Florida

E=endangered, T=threatened, P=proposed, C=candidate, s/a=similar appearance, SSC=species of special concern, ce=consideration encouraged, CH=Critical Habitat, p=proposed, BGEPA=Bald and Golden eagle protection act

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FEDERAL THREATENED, ENDANGERED,
AND OTHER SPECIES OF CONCERN LIKELY TO OCCUR IN
OKALOOSA COUNTY FLORIDA
Compiled by the U.S. Fish and Wildlife Service July 2011

Common Name	Scientific Name	State Status	FWS Status	Natural Communities
Southern sandshell (mussel)	<i>Hamiota australis</i>		C (E)	Riverine: found in small to medium-sized creeks and rivers in with slow to moderate currents over sandy substrates sometimes with some silt. Endemic to the Escambia, Yellow, and Choctawhatchee River drainages of Alabama and Florida
Choctaw bean (mussel)	<i>Villosa choctawensis</i>		C	Riverine: Small to large creeks and rivers with moderate current over sand to silty-sand substrates. Endemic to the Escambia, Yellow, and Choctawhatchee River drainages of Alabama and Florida.
Rayed creekshell (mussel)	<i>Anodontoides radiatus</i>		ce	RIVERINE: Small to medium sized creeks in substrates of mud, sandy mud, or sand and gravel (Panhandle watersheds: Apalachicola, Chipola, Escambia, Choctawhatchee)
Downy rainbow (mussel)	<i>Villosa villosa</i>		ce	RIVERINE: small streams to large rivers in sand or muddy sand substrates (Panhandle watersheds: Apalachicola, Chipola, Escambia, Choctawhatchee, Ochlockonee, Suwannee)
PLANTS:				
Perforate reindeer lichen	<i>Cladonia perforata</i>	E	E	TERRESTRIAL: coastal strand, rosemary scrub; full sun. Sites: Eglin AFB Santa Rosa/Okaloosa Island.
Curtiss' sandgrass	<i>Calamovilfa curtissii</i>	T	ce	PALUSTRINE: mesic and wet flatwoods, wet prairie, depression marsh TERRESTRIAL: mesic flatwoods
Sweet shrub	<i>Calycanthus floridus</i>	E		TERRESTRIAL: upland hardwood forest, slope forest, bluffs PALUSTRINE: bottomland forest, stream banks, floodplains
Baltzell's sedge	<i>Carex baltzellii</i>	T	ce	TERRESTRIAL: slope forest, moist sandy loam; moist sandy loam
Cruise's golden-aster	<i>Chrysopsis gossypina cruiseana</i>	E	ce	TERRESTRIAL: coastal dunes, coastal strand, coastal grassland; openings and blowouts
Spoon-leaved sundew	<i>Drosera intermedia</i>	T		LACUSTRINE: sinkhole lake edges PALUSTRINE: seepage slope, wet flatwoods, depression marsh RIVERINE: seepage stream banks, drainage ditches
Trailing arbutus	<i>Epigaea repens</i>	E		TERRESTRIAL: bluff, slope forest, mixed hardwood forest
Heartleaf	<i>Hexastylis arifolia</i>	T		RIVERINE: seepage stream bank TERRESTRIAL: slope forest
Florida anise	<i>Illicium floridanum</i>	T		PALUSTRINE: floodplain forest, baygall RIVERINE: seepage stream bank TERRESTRIAL: slope forest, seepage slope

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Common Name	Scientific Name	State Status	FWS Status	Natural Communities
Mountain laurel	<i>Kalmia latifolia</i>	T		RIVERINE: seepage stream bank TERRESTRIAL: slope forest, seepage stream banks
Panhandle lily	<i>Lilium iridollae</i>	E	ce	PALUSTRINE: baygall, dome swamp edges, mucky soil, seepage slope, edges of titi bogs, RIVERINE: blackwater stream banks
West's flax	<i>Linum westii</i>	E	ce	PALUSTRINE: dome swamp, depression marsh, wet flatwoods, wet prairie, pond margins
Pondspice	<i>Litsea aestivalis</i>	E	ce	PALUSTRINE: hydric hammock, baygall, dome swamp; on peaty soils
Gulf coast lupine	<i>Lupinus westianus</i>	T	ce	TERRESTRIAL: beach dune, scrub, disturbed areas, roadsides, blowouts in dunes
Hummingbird flower	<i>Macranthera flammea</i>	E		PALUSTRINE: seepage slope, dome swamp edges, floodplain swamps RIVERINE: seepage stream banks TERRESTRIAL: seepage slopes
Ashe's magnolia	<i>Magnolia ashei</i>	E		TERRESTRIAL: slope and upland hardwood forest, ravines
Pyramid magnolia	<i>Magnolia pyramidata</i>	E		TERRESTRIAL: slope forest
Nuphar ulvacea	<i>West Florida cow-lily</i>		ce	
Yellow butterwort	<i>Pinguicula lutea</i>	T		PALUSTRINE: flatwoods, bogs
Primrose-flower butterwort	<i>Pinguicula primulifolia</i>	E		PALUSTRINE: bogs, pond margins, margins of spring runs
Yellow fringed orchid	<i>Platanthera ciliaris</i>	T		PALUSTRINE: bogs, wet flatwoods TERRESTRIAL: Bluff
Yellow fringeless orchid	<i>Platanthera integra</i>	E	ce	PALUSTRINE: wet prairie, seepage slope TERRESTRIAL: mesic flatwoods
Large-leaved jointweed	<i>Polygonella macrophylla</i>	T	ce	TERRESTRIAL: scrub, sand pine/oak scrub ridges
Meadowbeauty	<i>Rhexia parviflora</i>	E	ce	PALUSTRINE: dome swamp margin, seepage slope, depression marsh; on slopes; with hypericum
Panhandle Meadowbeauty	<i>Rhexia salicifolia</i>		ce	
Orange azalea	<i>Rhododendron austrinum</i>	E		PALUSTRINE: bottomland forest RIVERINE: seepage stream bank TERRESTRIAL: slope forest, upland mixed forest
White-top pitcher plant	<i>Sarracenia leucophylla</i>	E	ce	PALUSTRINE: wet prairie, seepage slope, baygall edges, ditches
Parrot pitcher plant	<i>Sarracenia psittacina</i>	T		PALUSTRINE: wet flatwoods, wet prairie, seepage slope
Decumbant pitcher plant	<i>Sarracenia purpurea</i>	T		PALUSTRINE: Bogs
Red-flowered pitcher plant	<i>Sarracenia rubra</i>	T		PALUSTRINE: bog, wet prairie, seepage slope, wet flatwoods RIVERINE: seepage stream banks

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Common Name	Scientific Name	State Status	FWS Status	Natural Communities
Silky camellia	<i>Stewartia malacodendron</i>	E		PALUSTRINE: baygall PALUSTRINE: slope forest, upland mixed forest, TERRESTRIAL: slope forest, upland mixed forest; acid soils

E=endangered, T=threatened, P=proposed, C=candidate, s/a=similar appearance, SSC=species of special concern, ce=consideration encouraged, CH=Critical Habitat, p=proposed, BGEPA=Bald and Golden eagle protection act

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APPENDIX C

Rare, Threatened, and Endangered Species Survey Results: Proposed Camp Rudder and Eglin Main Routes

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Revised Rare, Threatened, and Endangered Species Survey Results: Proposed Camp Rudder and Eglin Main Routes

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DATE: January 21, 2011

PROJECT NUMBER: 410365

Introduction

On October 12 and 13, 2010 CH2M HILL staff conducted a rare, threatened, and endangered (RTE) species survey of two proposed routes for wastewater collection and treatment improvements for Eglin Air Force Base (AFB). The proposed Eglin Main Line and the proposed Camp Rudder route were surveyed to determine the presence of RTE species and potentially suitable habitat in or adjacent to the project area. These surveys were conducted to support Endangered Species Act Section 7 consultation and an Environmental Assessment for the construction of these lines.

Pedestrian surveys were completed and habitats along each route were characterized. Surveys identified three federally listed species (red-cockaded woodpecker, or RCW [*Picoides borealis*], eastern indigo snake [*Drymarchon corais couperi*], and Okaloosa darter [*Etheostoma okaloosae*]), one federal candidate species (gopher tortoise [*Gopherus polyphemus*]), and one state rare plant (tentatively identified as yellow fringed orchid [*Platanthera ciliaris*]), as occurring along or adjacent to the proposed routes. This revised TM contains updated route descriptions to add clarity for the reader. Each route is described below, followed by a discussion of the methodology and survey findings.

Route Descriptions

Proposed Eglin Main Line Route

Two alternatives are carried forward for analysis for construction of the Eglin Main Line: Alternative A and Alternative B. The two routes coincide west of Garnier Creek and differ along their eastern portions. The following sections describe the common portion of the route and then the two alternatives for the eastern portion of the Eglin Main Line route.

Eglin Main Line Common Route

The Eglin Main Line would originate at the intersection of RR 236 and RR 636, which would be the connection point to the 7SFG Force Main. The route would extend eastward down the middle of the Eglin AFB electric transmission right-of-way (ROW). The route would then continue eastward within the transmission ROW until intersecting a Gulf Power electric transmission easement east of Garnier Creek.

An up to 24-inch diameter pipe would be buried along the route. The final pipeline size would be determined during the design phase but would not exceed 24 inches. The pipeline would stay within the established ROW for this portion of the route and no forest clearing would result. This portion of the route crosses two perennial streams (Garnier Creek and an unnamed tributary of Garnier Creek), which would be crossed by directional bore.

Alternative A

Alternative A continues along the Eglin electric transmission ROW to the northwest corner of the Eglin AFB spray irrigation fields. At this point, the route departs from the ROW and follows the western edge and then the southern edge of the spray irrigation fields to connect with the Plew Sewage Treatment Plant (STP) line between the two existing lagoons at the southeastern corner of the spray irrigation fields.

No forest clearing would occur with Alternative A.

Alternative B

Alternative B would follow the west side of the Gulf Power ROW south to General Robert W. Bond Boulevard. Alternative B would stay within previously cleared ROW to the extent practicable, but portions of the route would require some clearing of mixed upland forest vegetation along the west side of the ROW. The route would then parallel the north or south side of General Robert W. Bond Boulevard in the existing cleared rights-of-way to the northeast to connect with the effluent main from the Plew STP at State Route (SR) 85. If a route on the south side of the road is selected, a directional bore would be used to cross the road at each end. Alternative B would include a directional bore under SR 85 to reach the tie-in with the Plew STP line on the east side of the road.

The portion of the route along the north side of General Robert W. Bond Boulevard would require clearing approximately 15 feet (ft) of longleaf pine forest between the Gulf Power easement and SR 85. The existing ROW has too many existing underground utilities to accommodate a new 20-inch pipeline.

Proposed Camp Rudder Route

Only one alternative is carried forward for the Camp Rudder route. The Camp Rudder route would originate at the intersection of Range Road (RR) 236 and RR 213, where the new line would connect with the 7SFG Force Main. From the connection point, the route would generally follow the north side of RR 213 to its intersection with RR 257. From this point the route would follow the east side of RR 257 to the Camp Rudder fence. Inside the fence, the route would remain on the east side of RR 257 and continue east toward the pool. From the pool area, the line would follow the unpaved service road to the Camp Rudder wastewater

plant. A new lift station would be built between the pool and the Camp Rudder wastewater plant.

Where the route parallels RR 213 and RR 257, the line would be placed outside the existing cleared ROW. This would require clearing 15 ft of longleaf pine forest along these roads. For approximately 700 feet along the north side of RR 213, the route would be relocated south into the existing cleared ROW on either the north or south side of the road to avoid impacts to red-cockaded woodpecker (*Picoides borealis*) (RCW) habitat. This portion of the line would be installed by trenching in the cleared ROW, if the location of existing buried utility lines allows or by directional bore underneath existing lines. If the route was relocated to the south side of the road a directional bore would be used to cross the road at each end.

No clearing would be required through Camp Rudder until the section between the pool and the wastewater plant. To construct along this section of the route, clearing of 15 ft of upland hardwood forest would be required. A 100-ft by 100-ft area, which would include the pipeline corridor, would be cleared for the proposed lift station.

The north side of RR 213 was selected to minimize conflict with existing buried utilities on the south side of the road and to minimize the number of road crossings. The east side of RR 257 was selected to avoid a potential cultural resource site on the west side of RR 258 and to minimize road crossings, as the Camp Rudder wastewater plant is east of RR 257.

Species Information

The U.S. Fish and Wildlife Service (USFWS) and the Florida Fish and Wildlife Conservation Commission (FWC) databases were reviewed for federal or state listed species with potential to occur on or near the project site. The USFWS database identifies 75 federally and state listed species with the potential to occur in Okaloosa County, Florida (Appendix A) (USFWS, 2010a and FWC, 2010). Based upon the results of the field survey, there are four potential RTE species that may inhabit the areas surveyed. The RCW, gopher tortoise, Eastern indigo snake, and the Okaloosa darter have the potential to occur within the wastewater line corridors.

The RCW requires open pine woodlands and savannahs dominated by older, mature pines for nesting and roosting (USFWS, 2003). Longleaf pine (*Pinus palustris*) is preferred for cavity excavation because it produces the most resin for the longest period of time (USFWS, 2003). The woodpecker also prefers habitats with abundant foraging areas of open mature pine canopy overstory with little or no hardwoods and low-density midstory (USFWS, 2003).

The gopher tortoise is currently listed as federally threatened among populations west of the Mobile and Tombigbee Rivers in Alabama, Mississippi, and Louisiana (USFWS, 2010b). Eastern populations are currently under review by the USFWS and are considered candidate to listing, with several state and federal agencies having signed a Memorandum of Intent in 2006 (FWC, 2007). The FWC currently has surveying, permitting, and mitigation guidelines for development in areas where the gopher tortoise is known or suspected to occur (FWC, 2008). The gopher tortoise inhabits dry, sandy uplands with well drained soils where it constructs sloping burrows (Mount, 1975; FWC, 2007). The sandhill habitats of the

gopher tortoise are generally associated with longleaf pine and turkey oak (*Quercus laevis*) (Mount, 1975; FWC, 2007). The gopher tortoise burrows provide refugia for several commensal species including the imperiled Florida pine snake and the eastern indigo snake (Mount, 1975; FWC, 2007).

The habitat of the eastern indigo snake in northwest Florida is primarily high pineland and flatwoods in proximity to streams or swamp edges (USFWS, 1982; Mount, 1975). These snakes rely heavily on gopher tortoise burrows for overwintering sites and are generally found in habitats similar to those of the gopher tortoise (Mount, 1975).

The Okaloosa darter is found only in the Choctawhatchee Bay drainage in Okaloosa and Walton Counties. These darters inhabit vegetated areas of clear, fast-flowing runs over sand and detritus (USFWS, 1998). Approximately 94 percent of the range of the Okaloosa darter is within Eglin AFB managed property. While the habitat is potentially suitable for the Okaloosa darter, this species has never been found in Garniers creek or the unnamed tributary (B. Tate/USFWS, personal communication). Therefore, there would be no effect to the Okaloosa darter and Section 7 consultation would not be required.

Methodology

A pedestrian survey was completed along the Camp Rudder route and each alignment under consideration for the Eglin Main Line route. Plant species were identified and surveyors looked for evidence of use by or potentially suitable habitat for listed species.

Survey Results

A vegetation list is provided as Appendix 1. This list identifies plant species observed during the survey and further identifies which routes or alignments where the species were observed. Each of the routes is discussed below with regard to habitat types and potential for listed species. Forested habitats identified during the survey were consistent with the Florida Natural Areas Inventory (FNAI) descriptions for sandhills in the Florida Panhandle (FNAI, 2010).

Proposed Eglin Main Line Route

The portion of the Eglin Main Line route that is within the Eglin AFB electric transmission ROW would not result in clearing of any trees. The habitat is open sandhills dominated at the time of the survey by false foxglove (*Agalinis divaricata*), dog-tongue (*Eriogonum tomentosum*) yankeeweed (*Eupatorium compositifolium*), tall jointweed (*Polygonella gracilis*), Canada goldenrod (*Solidago canadensis*), Maryland goldenaster (*Chrysopsis mariana*), and scratch daisy (*Haplopappus divaricata*). There were seedling trees and shrubs within the ROW, including beautyberry (*Callicarpa americana*), turkey oak, red savory (*Calamintha coccinea*), and yaupon (*Ilex vomitoria*). Along either side of the ROW, the forest canopy consisted primarily of longleaf pine, turkey oak, and myrtle oak (*Quercus myrtifolia*). The understory included saw palmetto (*Serenoa repens*), five species of greenbrier (*Smilax auriculata*, *Smilax glauca*, *Smilax laurifolia*, *Smilax pumila*, and *Smilax rotundifolia*), and the shrubs and seedlings observed within the ROW.

RCWs were not noted along this route, and the forest understory and midstory typically were too dense for RCW foraging.

One abandoned gopher tortoise burrow was noted along the Eglin transmission ROW. Although active burrows were not observed along the route, fresh gopher tortoise tracks were observed along the field road driven to access the route. The gopher tortoise covered more than 0.5 mile in less than 6 hours and used both the Eglin and Gulf Power ROWs.

No indigo snakes were observed along the route. However, as the route passes through active gopher tortoise habitat, it is likely that the indigo snake occurs in the area.

The Eglin Main Line route would cross two perennial streams: Garner Creek and a smaller unnamed tributary to Garner Creek. The Okaloosa darter was not observed in either stream at the point of crossing; however, both creeks were clear, vegetated, sandy runs. The stream habitat at the point of crossing and downstream from the point of crossing closely matches the preferred habitat described for the species. The Okaloosa darter could occur in these streams. Forest areas along the slopes leading to the two streams were much denser with understory and subcanopy vegetation than the forest of the sandhills at the top of the slope.

Two emergent/scrub-shrub wetlands were observed, one associated with each stream. Both streams are protected by maintained erosion control projects on each side of the creek. A third maintained erosion control project was identified near the point where Alternative A and Alternative B diverge. This erosion control project protects a springhead that is approximately 200 feet north of the Eglin electric transmission ROW.

The wetland along Garner Creek, downstream of the point of crossing, contained no RTE plant species. The wetland on the unnamed tributary of Garner Creek, upstream of the point of crossing, contains a single individual of the genus *Platanthera*. The specimen was past fruiting and beginning to deteriorate and could not be positively identified to species. However, the habitat and the density of old fruits make it likely that it was a yellow fringed orchid (*Platanthera ciliaris*), which is threatened in the State of Florida, rather than a yellow fringeless orchid (*Platanthera integra*), which is endangered in the State of Florida.

Alternative A

The habitat along the portion of Alternative A that continues in the Eglin electric transmission ROW is the same as that described for the Eglin Main Line route. Gopher tortoise tracks were observed along the entire length of the transmission ROW within Alternative A. Because of the presence of gopher tortoise and the sandhills habitat, it is possible that indigo snakes would occur along the alignment.

Once the route turns to follow the spray irrigation field, the habitat within the project area consists of planted grasses that are regularly mowed. This portion of the alignment offers little botanical or wildlife habitat.

No streams or wetlands occur along Alternative A.

Alternative B

The Gulf Power ROW portion of Alternative B was similar to the Eglin Main Line route and was dominated by the same species. The forest to the west of the Gulf Power ROW was

similar to that described along the Eglin Main Line route, but the subcanopy was denser and contained a greater percentage of hardwoods, primarily myrtle oak. Near the southern end of the alignment, sand pine (*Pinus clausa*) was observed as an overstory component.

Gopher tortoise tracks were observed along the Gulf Power ROW. Because of the presence of gopher tortoise and the sandhills habitat, it is possible that indigo snakes would occur along this route.

No streams or wetlands were observed along Alternative B.

Proposed Camp Rudder Route

The entire proposed Camp Rudder route is in open sandhill environment consisting of longleaf pine, sand pine, and turkey oak with a xeric, deep sand substrate. The understory consisted of greenbriers (*Smilax auriculata* and *Smilax laurifolia*), Maryland goldenaster, blueberries (*Vaccinium* spp.), Canada goldenrod, and scratch daisy. The more open areas contained wiregrass (*Aristida stricta*) and little bluestem (*Schizachyrium scoparium*). More mesic patches contained yaupon.

No gopher tortoise burrows were observed along the Camp Rudder route. However, there are portions of the route where the habitat is potentially suitable for gopher tortoise and indigo snake within or immediately adjacent to the survey area.

The entire route, except for minor areas with dense subcanopy, is suitable for RCW, and numerous cavity trees were marked along RR 213, indicating that RCWs inhabit the area. One cavity tree is within 35 ft of the existing edge of clearing and may be at risk of removal for the proposed work.

There were no gopher tortoise burrows noted along the Camp Rudder route; however, the habitat was suitable for gopher tortoise.

There were no wetlands, streams, or other water bodies along the proposed Camp Rudder route. The Okaloosa darter would not be affected by construction of this line.

No other listed species or potentially suitable habitats for listed species were observed along the proposed Camp Rudder route.

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Appendix 1

Plant Species Observed Along Eglin Main Line and Camp Rudder Routes

Scientific Name	Common Name	Habitats	Camp Rudder Route	Eglin Main Alternative A	Eglin Main Alternative B
<i>Agalinis divaricata</i>	False Foxglove	Open Pine Woods And Maintained ROW	X	X	X
<i>Andropogon glomeratus hirsutior</i>	Bushy Beardgrass	Wetlands Along Spring Runs		X	
<i>Andropogon virginicum</i>	Broomsedge	Open Pine Woods And Maintained ROW	X	X	X
<i>Aristida stricta</i>	Wiregrass	Open Longleaf Pine Woods	X		
<i>Asclepias humistrata</i>	Pinelands Milkweed	Maintained ROW		X	
<i>Asclepias verticillata</i>	Whorled Milkweed	Maintained ROW			X
<i>Bidens mitis</i>	Cut Leaf Beggars Ticks	Wetlands Along Spring Runs		X	
<i>Bignonia capreolata</i>	Cross Vine	Mesic Mixed Forest	X		
<i>Calamintha coccinea</i>	Red Savory	Open Pine Woods And Maintained ROW	X	X	X
<i>Callicarpa americana</i>	Beautyberry	Mixed Pine-Hardwood Forest, Usually With Longleaf Pine	X	X	X
<i>Cenchrus incertus</i>	Coast Sandspur	Maintained ROW	X		
<i>Centrosema virginianum</i>	Climbing Butterfly Pea	Maintained ROW		X	
<i>Chamaecrista fasciculata</i>	Partridge Pea	Maintained ROW	X	X	X
<i>Chrysoma pauciflora</i>	Woody Goldenrod	Maintained ROW		X	X

Plant Species Observed Along Eglin Main Line and Camp Rudder Routes

Scientific Name	Common Name	Habitats	Camp Rudder Route	Eglin Main Alternative A	Eglin Main Alternative B
<i>Chrysopsis mariana</i>	Maryland Goldenaster	Open Pine Woods And Maintained ROW	X	X	X
<i>Dichanthelium aciculare</i>	Witchgrass	Open Pine Woods And Maintained ROW	X	X	X
<i>Dichanthelium dichotomum</i>	Deertongue	Open Pine Woods And Maintained ROW	X	X	X
<i>Diospyros virginiana</i>	Persimmon	Mixed Pine-Hardwood Forest, Usually With Longleaf Pine	X	X	X
<i>Eleocharis obtusa</i>	Spikerush	Wetlands Along Spring Runs		X	
<i>Erianthus alopecuroides</i>	Silver Plume Grass	Open Mixed Woods	X	X	
<i>Erichtites hieracifolia</i>	Fireweed	Pine Savanna	X		
<i>Eriogonum tomentosum</i>	Dog-tongue	Maintained ROW		X	X
<i>Eupatorium capillifolium</i>	Dogfennel	Maintained ROW	X		
<i>Eupatorium compositifolium</i>	Yankeeweed	Open Pine Woods And Maintained ROW	X	X	X
<i>Euthamia caroliniana</i>	Slender Flattop Goldenrod	Open Pine Woods And Maintained ROW		X	X
<i>Froelichia floridana</i>	Cottonweed	Open Pine Woods And Maintained ROW	X	X	X
<i>Fuirena pumila</i>	Umbrellagrass	Wetlands Along Spring Runs		X	
<i>Galactia regularis</i>	Eastern Milkpea	Maintained ROW		X	

Plant Species Observed Along Eglin Main Line and Camp Rudder Routes

Scientific Name	Common Name	Habitats	Camp Rudder Route	Eglin Main Alternative A	Eglin Main Alternative B
<i>Haplopappus divaricatus</i>	Scratch Daisy	Open Pine Woods And Maintained ROW	X	X	X
<i>Helenium amarum</i>	Sneezeweed	Open Pine Woods And Maintained ROW	X	X	X
<i>Heterotheca subaxillaris</i>	Camphorweed	Maintained ROW		X	
<i>Hypericum gentianoides</i>	Orangeweed	Open Pine Woods And Maintained ROW	X	X	X
<i>Ilex opaca</i>	American Holly	Mixed Pine-Hardwood Forest, Usually With Longleaf Pine	X		
<i>Ilex vomitoria</i>	Yaupon	Mixed Pine-Hardwood Forest, Usually With Longleaf Pine	X	X	X
<i>Ipomoea lacunosa</i>	Whitstar	Maintained ROW		X	
<i>Juncus bufonius</i>	Toad Rush	Wetlands Along Spring Runs		X	
<i>Juncus scirpoides</i>	Rush	Wetlands Along Spring Runs		X	
<i>Lespedeza cuneata</i>	Sericea	Maintained ROW		X	X
<i>Lespedeza hirta</i>	Hairy Bushclover	Open Pine Woods And Maintained ROW	X	X	
<i>Leucothoe racemosa</i>	Fetterbush	Mesic Mixed Forest On Lower Slopes Near Spring Runs		X	
<i>Liatris gracilis</i>	Slender Gayfeather	Open Pine Woods And Maintained ROW	X	X	X
<i>Licania michauxii</i>	Gopher Apple	Open Pine Woods And	X	X	X

Plant Species Observed Along Eglin Main Line and Camp Rudder Routes

Scientific Name	Common Name	Habitats	Camp Rudder Route	Eglin Main Alternative A	Eglin Main Alternative B
		Maintained ROW			
<i>Liquidambar styraciflua</i>	Sweetgum	Mixed Pine-Hardwood Forest, Usually With Longleaf Pine	X		
<i>Lycopodium alopecuroides</i>	Bottlebrush	Wetlands Along Spring Runs		X	
<i>Magnolia grandiflora</i>	Southern Magnolia	Mixed Pine-Hardwood Forest, Usually With Longleaf Pine	X	X	X
<i>Magnolia virginiana</i>	Sweetbay	Wetlands Along Spring Runs		X	
<i>Morella caroliniensis</i>	Southern bayberry	Lower Slopes Near Streams		X	
<i>Morella cerifera</i>	Wax Myrtle	Mixed Woods	X	X	X
<i>Muhlenbergia expansa</i>	Muhly Grass	Mixed Pine-Hardwood Forest	X	X	X
<i>Nyssa biflora</i>	Tupelo	Wetlands Along Spring Runs		X	
<i>Oenothera fruticosa</i>	Evening Primrose	Wetlands Along Spring Runs		X	
<i>Opuntia humifusa</i>	Prickly Pear	Maintained ROW	X	X	X
<i>Panicum virgatum</i>	Switchgrass	Open Pine Woods	X		
<i>Paspalum notatum</i>	Bahiagrass	Maintained ROW	X	X	X
<i>Persia Borbonia</i>	Redbay	Mesic Mixed Forest On Lower Slopes Near Spring Runs		X	
<i>Phlox pilosa</i>	Downy Phlox	Maintained ROW		X	
<i>Pinus clausa</i>	Sand Pine	Sandhill Pine Forests And	X		X

Plant Species Observed Along Eglin Main Line and Camp Rudder Routes

Scientific Name	Common Name	Habitats	Camp Rudder Route	Eglin Main Alternative A	Eglin Main Alternative B
<i>Pinus palustris</i>	Longleaf Pine	Pine Savanna And Mixed Pine-Hardwood Forest	X	X	X
<i>Pityopsis graminifolia</i>	Narrowleaf silkgrass	Maintained ROW			
<i>Platanthera ciliaris</i>	Yellow Fringed Orchid	Wetlands Along Spring Runs		X	
<i>Pluchea odorata</i>	Marsh Fleabane	Wetlands Along Spring Runs		X	
<i>Polygonella gracilis</i>	Tall Jointweed	Open Pine Woods And Maintained ROW			
<i>Prunus serotina</i>	Wild Black Cherry	Mixed Pine-Hardwood Forest, Usually With Longleaf Pine			X
<i>Prunus Sp.</i>	escaped cultivar	Pine Savanna	X		
<i>Pseudognaphalium obtusifolium</i>	Rabbit Tobacco	Maintained ROW	X	X	X
<i>Pteridium aquilinum</i>	Bracken Fern	Open Pine Woods And Maintained ROW	X		
<i>Quercus myrtrifolia</i>	Myrtle Oak	Mixed Pine-Hardwood Forest, Usually With Longleaf Pine	X	X	X
<i>Quercus falcata</i>	Spanish Oak	Mixed Pine-Hardwood Forest, Usually With Longleaf Pine	X		
<i>Quercus geminate</i>	Sand Live Oak	Mixed Pine-Hardwood Forest, Usually With Longleaf Pine	X		X
<i>Quercus laevis</i>	Turkey oak	Mixed Pine-Hardwood Forest, Usually With Longleaf Pine	X		X

Plant Species Observed Along Eglin Main Line and Camp Rudder Routes

Scientific Name	Common Name	Habitats	Camp Rudder Route	Eglin Main Alternative A	Eglin Main Alternative B
<i>Quercus margaretta</i>	Sand Post Oak	Mixed Pine-Hardwood Forest, Usually With Longleaf Pine	X		
<i>Rhexia virginiana</i>	Handsome Harry	Wetlands Along Spring Runs		X	
<i>Rhus copallinum</i>	Winged Sumac	Mixed Pine-Hardwood Forest, Usually With Longleaf Pine	X	X	
<i>Rhus glabra</i>	Smooth Sumac	Mixed Pine-Hardwood Forest, Usually With Longleaf Pine	X		
<i>Rubus flagellaris</i>	Blackberry	Mixed Pine-Hardwood Forest And Maintained ROW	X	X	X
<i>Rudbeckia triloba</i>	Brown-eyed Susan	Maintained ROW	X	X	X
<i>Sabal minor</i>	Sabal Palm	Along Roadside At Edge Of Pine Savanna	X		
<i>Schizachyrium hirtiflorum</i>	Bearded Bluestem	Open Pine Woods And Maintained ROW	X	X	
<i>Schizachyrium scoparium</i>	Little Bluestem	Pine Savanna	X		
<i>Scirpus cyperinus</i>	Woolgrass	Wetlands Along Spring Runs		X	
<i>Serenoa repens</i>	Saw Palmetto	All Upland Forested Areas	X	X	X
<i>Smilax auriculata</i>	Eared Greenbrier	Mixed Woods	X	X	X
<i>Smilax glauca</i>	Greenbrier	Mixed Woods		X	
<i>Smilax laurifolia</i>	Laurel-leaf Greenbrier	Mixed Woods	X	X	X
<i>Smilax rotundifolia</i>	Largeleaf Greenbrier	Mixed Woods		X	

Plant Species Observed Along Eglin Main Line and Camp Rudder Routes

Scientific Name	Common Name	Habitats	Camp Rudder Route	Eglin Main Alternative A	Eglin Main Alternative B
<i>Smilax pumila</i>	Sarsaparilla Vine	Mixed Pine-Hardwood Forest, Usually With Longleaf Pine	X	X	X
<i>Solidago canadensis</i>	Canada Goldenrod	Open Pine Woods And Maintained ROW	X	X	X
<i>Sorghastrum secundum</i>	Lopsided Indiangrass	Open Pine Woods	X		
<i>Sporobolus spp.</i>	Dropseed	Open Pine Woods	X	X	
<i>Toxicodendron radicans</i>	Poison Ivy	Throughout	X	X	X
<i>Trichostema dichotomum</i>	Forked Bluecurls	Open Pine Woods And Maintained ROW	X	X	
<i>Typha latifolia</i>	Common Cat-tail	Wetlands Along Spring Runs		X	
<i>Vaccinium spp.</i>	Blueberries	Mixed Pine-Hardwood Forest	X	X	X
<i>Xyris sp.</i>	Yellow-eyed Grass	Wetlands Along Spring Runs		X	
<i>Yucca flaccida</i>	Weakleaf Yucca	Open Pine Woods And Maintained ROW	X	X	X
Taxonomy follows Clewell, 1985.					

APPENDIX D

Biological Assessment

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DEPARTMENT OF THE AIR FORCE
HEADQUARTERS 96TH AIR BASE WING (AFMC)
EGLIN AIR FORCE BASE FLORIDA

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Mr. Stephen M. Seiber
Chief, Natural Resources Section
96 CEG/CEVSN
501 De Leon Street, Suite 101
Eglin AFB FL 32542-5133

MAR 10 2011

Dr. Donald Imm
U.S. Fish and Wildlife Service
1601 Balboa Avenue
Panama City FL 32405

Dear Dr. Imm:

The following information is being submitted to fulfill requirements under Section 7 of the Endangered Species Act (ESA) of 1973, as amended. This biological assessment addresses potential impacts to the federally listed endangered red-cockaded woodpecker (*Picoides borealis*) (RCW), and the federally listed threatened eastern indigo snake (*Drymarchon corais couperi*), associated with the construction of wastewater pipelines and lift stations and installation of fiber optic lines on Eglin Air Force Base (AFB), Florida (Figure 1). Additionally, the gopher tortoise (*Gopherus polyphemus*), which is listed as threatened by the State of Florida and under consideration for listing under the ESA is considered.

Description of the Proposed Action

The Proposed Action is to construct two new wastewater pipelines and three new lift stations and to install fiber optic lines parallel to the new wastewater pipelines on Eglin AFB. The new wastewater pipelines would connect with existing lines and would convey Eglin AFB wastewater to the Okaloosa County Water and Sewer (OCWS) Arbennie Pritchett Water Reclamation Facility (APWRF) in Fort Walton Beach. One lift station would be constructed at the northern end of the proposed Camp Rudder wastewater line and two lift stations would be constructed inside the fence of Eglin Main Base to pump into the Plew Sewage Treatment Plant (STP) line. OCWS also would place fiber optic lines parallel to the wastewater pipelines but within the area disturbed for pipe installation.

Camp Rudder Line

The Camp Rudder line would be up to an 8-inch (in.) diameter pipeline that would originate at the Camp Rudder wastewater plant and follow an unpaved service road to the pool area (Figure 2). The final pipeline size would be determined during the design phase but would not exceed 8 inches. From the pool area, the route would continue generally west to Range Road (RR) 257, where it would follow the east side of RR 257 through the fenced area. Once outside the fenced area, the route would continue to follow the east

side of RR 257 to its intersection with RR 213. From the intersection of RR 257 and RR 213, the route would generally follow the north side of RR 213 to RR 236. The pipeline would be placed beneath RR 236 by directional bore and connect with the 7SFG Force Main. In addition to the new wastewater pipeline, a new lift station would be built between the pool area and the Camp Rudder wastewater plant.

Where the route parallels RR 213 and RR 257, the wastewater pipeline would be placed outside the existing cleared right-of-way (ROW). This would require clearing of up to 15 feet (ft) of vegetation including longleaf pine (*Pinus palustris*) forest along these roads. For approximately 700 feet along the north side of RR 213, the route would be relocated south into the existing cleared ROW on either the north or south side of the road to avoid tree removal and impacts to RCW habitat cluster 907E. This portion of the line would be installed by trenching in the cleared ROW, if the location of existing buried utility lines allows or by directional bore underneath existing lines in the cleared ROW. If the route was relocated to the south side of the road a directional bore would be used to cross the road at each end.

No clearing would be required through Camp Rudder except for the section between the pool area and the wastewater plant, where clearing of approximately 15 ft of upland hardwood forest would be required. An approximately 100-ft by 100-ft area, which would include the pipeline corridor, would be cleared for the proposed lift station.

Eglin Main Line

Two alternatives are carried forward for detailed analysis for construction of the Eglin Main line: Alternative A and Alternative B (Figure 3). The routes of the two alternatives coincide west of Garnier Creek and differ along their eastern portions.

Under both alternatives, the Eglin Main line would be up to a 24-in. diameter wastewater pipeline that would originate at the intersection of RR 236 and RR 636, which would be the connection point to the 7SFG Force Main. The final pipeline size would be determined during the design phase but would not exceed 24 inches. The route extends eastward through the middle of the Eglin AFB electric transmission ROW. The route continues eastward within the transmission ROW until intersecting a Gulf Power electric transmission easement east of Garnier Creek. The pipeline would be buried along the route. The pipeline would stay within the established ROW for this portion of the route and no forest clearing would result. This portion of the route crosses two perennial streams with fringing wetlands (Garnier Creek and an unnamed tributary of Garnier Creek), which would be crossed by directional bore beneath the stream bottom. From the Gulf Power ROW, Alternative A continues along the Eglin powerline ROW to the northwest corner of the Eglin AFB spray irrigation fields. At this point, the route departs from the ROW and follows the western edge and then the southern edge of the spray irrigation fields to connect with the Plew STP line between the two existing lagoons at the southeastern corner of the spray irrigation fields.

Alternative B would depart from the Eglin powerline ROW and follow the west side of the Gulf Power ROW south to General Robert W. Bond Boulevard. Alternative B would stay within previously cleared ROW to the extent practical, but portions of the route would require some clearing of mixed upland forest vegetation along the west side

of the ROW. Clearing of up to a 30-ft wide by 200-ft long area may be necessary around each Gulf Power transmission tower guy wire anchor. The route would then parallel the north or south side of General Robert W. Bond Boulevard in the cleared rights-of-way to the northeast and connect with the Plew STP line at State Route (SR) 85. If the route was relocated to the south side of the road a directional bore would be used for access across the road. Alternative B would include a directional bore under SR 85 to reach the tie-in with the Plew STP effluent main on the east side of the road.

Lift Stations

Two lift stations would be constructed along the existing Plew STP line (Figure 3). One lift station would be built in the vicinity of the Eglin Main Wastewater Treatment Plant south of Nomad Road and the other would be built in the vicinity of the Plew STP.

Fiber Optic Lines

Fiber optic lines would be placed parallel to the new wastewater pipelines. After the new pipelines are constructed and the trenches backfilled, fiber optic conduit would be plowed into the same disturbed area prior to final soil stabilization. Fiber optic conduit would be placed parallel to the wastewater pipelines and would be offset by 5 ft. The fiber optic lines would be strung into the conduit later with no additional disturbance.

Biological Information

Two federally listed endangered or threatened species and one species under consideration for listing are known to occur within or near the project area. The following list indicates those species considered for this action:

<u>Common Name</u>	<u>Scientific name</u>	<u>Federal Status</u>
Red-cockaded woodpecker	<i>Picoides borealis</i>	Endangered
Eastern Indigo Snake	<i>Drymarchon corais couperi</i>	Threatened
Gopher Tortoise	<i>Gopherus polyphemus</i>	Under Consideration (Florida Threatened)

Red-cockaded Woodpecker

The RCW is listed as endangered under the ESA (U.S. Fish and Wildlife Service [USFWS], 2010a). The RCW is endemic to the Southeast, with the existing populations relatively small and isolated. The species is considered highly sedentary compared to other birds and typical dispersion distances are relatively short. The RCW is a small (measuring approximately 8.7-inches in total length) black-and-white woodpecker with a longish bill. The species is black and white barred above and white below with black spots on the flanks. The crown, nape, and moustachial are black and border the white cheeks and side of neck. The male has a small red mark on the side of the nape. Juveniles are browner, with more red on the crown (USFWS, 2010a).

RCWs require open pine woodlands with large old pines. The species is unique in that these birds nest and roost in cavities excavated from live pine trees. The species is able to exploit resin from the pines to protect against predation, and the longleaf pine is

typically preferred because it produces more resin than other pine species. The RCW lives in groups that share and defend all-purpose territories throughout the year. As a result, they also have a unique cooperative breeding system in which some mature males forego their mating opportunities to assist others in raising offspring. The birds nest in the spring and produce clutch sizes of 2 to 4 eggs. The woodpeckers capture prey primarily under the bark of dead and live pine trees. Their diets consist of arthropods such as ants, roaches, beetles, spiders, centipedes, true bugs, crickets, and moths (USFWS, 2003).

The decline of the RCW was caused by almost complete habitat loss. The old-growth pine savannas and woodlands that once dominated the Southeast were predominantly destroyed by intense logging. Fire suppression also contributed to the loss of longleaf pine forests. Conservation and management efforts are currently underway to restore and maintain the longleaf pine habitats and prevent further decline of the existing populations (USFWS, 2003). Within the project area, cavity trees (active and inactive) suitable for RCW nesting occur north of RR 213 and additional habitat suitable for RCW foraging occurs along the entirety of the Camp Rudder line south of the fenced area of Camp Rudder (CH2M HILL, 2010). Potentially suitable foraging habitat for the RCW occurs along the western portion of the proposed Eglin Main line. However, no active cavity trees or woodpecker activity were observed in this area (CH2M HILL, 2010).

No critical habitat has been designated for the RCW (USFWS, 2010a).

The population of RCWs on Eglin AFB has been designated as 1 of 13 primary core populations that must demonstrate recovery to enable delisting of the species. Through ongoing stewardship and management activities, the RCW population on Eglin AFB has achieved the recovery goal established by the USFWS.

Eastern Indigo Snake

The eastern indigo snake is listed as threatened under the ESA (USFWS, 2010b). The species is most abundant in peninsular Florida and south Georgia, with scattered populations persisting in coastal Mississippi, Alabama, the Florida Panhandle, and coastal South Carolina (USACE, 2009). The eastern indigo snake is a large non-venomous snake and can reach lengths of 8.5 ft. The snake has a heavy black body with red or orange on the chin and throat (USFWS, 1982, 2010b).

This snake actively forages along wetland edges to feed on rodents, birds, reptiles, and amphibians. The eastern indigo snake prefers dry, mature pinelands dominated by longleaf pine, with a fire-maintained subclimax understory community dominated by wiregrass (*Aristida stricta*) and turkey oak (*Quercus laevis*). Frequently the eastern indigo snake occurs where this habitat type is adjacent to wetlands. Eastern indigo snakes are often found in association with gopher tortoises and they use gopher tortoise burrows for shelter (USFWS, 1982, 2010b). Habitat destruction, modification, and fragmentation are the primary threats to this species. Anthropogenic mortality also contributes to the species decline (USFWS, 2008).

Within the project area, potentially suitable habitat for the eastern indigo snake occurs along both the Camp Rudder line and the Eglin Main line. The habitat along the Eglin Main line, prior to reaching the Eglin spray irrigation fields, was of apparent higher

quality than that along the proposed Camp Rudder line. There were more wetlands in proximity to this line and gopher tortoise burrows and active sign were observed along the Camp Rudder line (CH2M HILL, 2010). The eastern indigo snake is extremely uncommon on the Eglin Range with sighting of only 29 indigo snakes throughout the Eglin range from 1956 to 1999, and no reported sightings since 1999.

No critical habitat has been designated for the eastern indigo snake (USFWS, 2010b).

Other Species Considered:

Gopher Tortoise

The gopher tortoise is listed as threatened by the State of Florida (Gopher Tortoise Council, 2010e). The western population of the gopher tortoise, occurring west of the Tombigbee River, is federally listed as threatened, and the eastern population, while not listed under the ESA, is under consideration for federal listing (USFWS, 2010e). The gopher tortoise is a large terrestrial turtle with the carapace reaching a length of up to 14.6 in. The turtle is dark-brown to grayish-black with elephantine hind feet, shovel-like forefeet, and a gular projection beneath the head on the yellowish, hingeless plastron (USACE, 2009; USFWS, 1990).

Gopher tortoise habitat is generally defined by three conditions. Suitable habitat must have well-drained, sandy soils to allow easy burrowing to depths of more than 3 ft, an abundance of herbaceous ground cover for food, and a generally open canopy with sparse shrub cover. Gopher tortoises also occur in ruderal habitats such as pastures, field edges, and utility ROWs. The most significant threats to the species are adverse habitat alteration, taking for food or pets, and development of occupied habitats. Respiratory disease also has become a significant threat to the species. Natural nest predation and juvenile mortality are high and can approach 90 percent loss at each stage (Gopher Tortoise Council, 2010; USACE, 2009; USFWS, 1990).

As the eastern population of the gopher tortoise is not listed under the ESA, no critical habitat has been proposed.

Determination of Impacts

Red-cockaded Woodpecker

No active or inactive RCW cavity trees would be removed as a result of the project. There is no suitable RCW habitat along the proposed route of the Camp Rudder line within the fenced area of Camp Rudder, but there are known cavity trees and foraging areas in the project vicinity outside the fenced area. The route selection process avoided areas where cavity trees were known to occur and field reconnaissance confirmed that no cavity trees occur in areas that would be cleared. Because of the time that will pass between the 2010 field reconnaissance and project construction, the project area will be surveyed again, approximately 60 days prior to the planned start of construction, by Eglin NRS staff to determine whether RCWs have made cavities in any trees within the project area. If any cavity trees are located that cannot be avoided during construction, additional consultation with the USFWS would be undertaken prior to project implementation.

Construction of the Camp Rudder line would result in clearing an approximately 15-ft-wide strip of longleaf pine forest along the north side of RR 213 and the east side of RR 257, which does provide foraging habitat for this species. The total distance cleared would be approximately 8 miles, resulting in a loss of 14.7 acres of RCW foraging habitat. A pre-construction briefing by Eglin NRS would be required to educate construction personnel about sensitive species and requirements during construction.

Eglin has developed an independent Oracle-based GIS tool (model) that creates foraging habitat assessments, allowing Eglin to consistently and accurately estimate the available foraging resources without sampling the entire Reservation. The USFWS completed Endangered Species Act Section 7 consultation on the model in June 2003, and concurred with Eglin NRS findings of Not Likely to Adversely Affect. Research has demonstrated that foraging analyses such as Eglin's model accurately portray the actual territories of RCW groups.

Eglin NRS has consulted with the USFWS on the guidelines for the habitat conditions and foraging requirements for RCWs on Eglin. Eglin NRS personnel use the guidelines identified in the Threatened and Endangered Species Component Plan when determining whether consultation with the USFWS is required. Table 1 is a comparison of the current Recovery Plan foraging standards and Eglin specific standards.

Table 1. Foraging Habitat Variable Standards for Red-cockaded Woodpeckers

Measure	USFWS Recovery Standard	USFWS Managed Stability Standard	Eglin Recovery Standard	Eglin Managed Stability Standard
Acres	200-300	75	300	150
Density (stems per acre)	18 > 14 in dbh	None	20 > 10 in dbh	None
Density total (stems per foraging area)	None	None	6,000 > 10 in dbh	3,000 > 10 in dbh
Basal Area (ft ² per acre)	20 > 14 in dbh	40-70 > 10 in dbh	20 > 10 in dbh	None
Basal Area total (ft ²)	None	3,000 > 10 in dbh	6,000 > 10 in dbh	4,000 > 10 in dbh
Distance from cluster	0.5 mile	0.25 mile	0.5 mile	0.3 mile
Midstory height	7 feet	7 feet	7 feet	7 feet
Ground cover	>40% herb	None	> 40% herb	None

> = greater than; < = less than; dbh = diameter at breast height; ft² = square feet; in = inch

The first column contains the values defined in the Recovery Plan as the Recovery Standard for public lands. The second column contains the values defined in the Recovery Plan as the Managed Stability Standard for private lands in order to protect existing groups. The last two columns are recommendations for Eglin's Recovery Standard and Managed Stability Standard. A No Effect determination would be made if a cluster's foraging resources exceed Eglin's Recovery Standard after the completion of a Proposed Action. A Not Likely to Adversely Affect determination would be made if a cluster's foraging resources fall between Eglin's Recovery Standard and Eglin's Managed Stability Standard after the completion of a proposed action. A Likely to Adversely Affect determination would be made if a cluster's foraging resources fall

below Eglin's Managed Stability Standard after the completion of a proposed action. Also, if the proposed action affects less than 1 percent of the foraging resources, and the foraging resources are above Eglin's Managed Stability Standard, then no consultation would be required.

Through use of the Eglin AFB RCW foraging habitat model (Table 1, Figure 4), it has been determined that 10 RCW clusters would be impacted by loss of foraging habitat from tree clearing. Seven of these clusters would not lose enough resources to result in a significant difference to habitat value and would, therefore, result in a No Effect determination with regard to habitat alteration. Two clusters are below the Recovery Standard but would not be reduced to below the Managed Stability Standard. Therefore, removal of trees from these two clusters would result in a Not Likely to Adversely Affect habitat determination.

Cluster 907E along RR 213 is below the Managed Stability Standard. This cluster would be avoided during construction. The line would be re-routed to avoid this area by directionally boring beneath the cleared ROW along RR 213. There will be no tree removal in cluster 907E so there would be no impacts to RCW foraging habitat or cavity trees in this cluster.

There are no known RCW cavity trees along or in proximity to the proposed Eglin Main line route and field reconnaissance confirmed that no cavity trees occur in areas that would be cleared. There is potentially suitable RCW foraging habitat along Eglin Main line Alternatives A and B. However, this potential foraging habitat is not within the area that would be disturbed. No impacts to the RCW or its habitat would result from construction and operation of the Eglin Main line. Because of the time that will pass between the 2010 field reconnaissance and project construction, the project area will be surveyed again, approximately 60 days prior to the planned start of construction, by Eglin NRS staff to determine whether RCWs have made cavities in any trees within the project area. If any cavity trees are located that must be removed, additional consultation with the USFWS would be undertaken prior to project implementation. In addition, tree clearing and construction will not be conducted during the RCW breeding season (April through July) to avoid potential adverse impacts to breeding pairs from noise-related disturbance.

There is no suitable nesting or foraging habitat for the RCW at or adjacent to the two proposed lift station sites on the line to the APWRF. No impacts to the RCW or the species' habitat would result from installation of these two lift stations. Because of the time that will pass between the 2010 field reconnaissance and project construction, the project area will be surveyed again, approximately 60 days prior to the planned start of construction, by Eglin NRS staff to determine whether conditions have changed and potentially suitable RCW foraging habitat has developed in the area that would be disturbed. If any newly developed potentially suitable foraging habitat would be cleared, appropriate mitigation for these impacts would be determined and implemented.

Because the fiber optic lines would be installed in the same area that was previously disturbed for installation of the wastewater pipelines, no additional impacts to the RCW or its habitat would result from installation of the fiber optic lines.

The wastewater pipelines, lift stations, and fiber optic lines would be regularly inspected and maintained after construction. No impacts to the RCW or its habitat would be expected from routine inspection and maintenance.

The potential for impacts would end when the project is complete and, other than cumulative loss of foraging habitat, there would be no potential for this project to then interact with other projects with regard to impacts on the RCW. Because of the amount of RCW foraging habitat on Eglin AFB, the impact of cumulative foraging habitat loss on the RCW, as a result of the proposed action, would likely be minimal and Eglin NRS believes these cumulative impacts are Not Likely to Adversely Affect the RCW. No other cumulative impact to this species would be expected.

Eastern Indigo Snake

The habitat along RR 213 and the southern portion of RR 257 was identified as potentially suitable for the eastern indigo snake. However, the eastern indigo snake was not observed along this route and there were no gopher tortoise burrows or sign of recent gopher tortoise activity along the proposed Camp Rudder wastewater pipeline route (CH2M HILL, 2010). Because of the time that will pass between the 2010 field reconnaissance and project construction, the Camp Rudder project area will be surveyed again, approximately 60 days prior to the planned start of construction, by Eglin NRS staff to determine whether the eastern indigo snake may use any portion of the route.

The habitat along the proposed Eglin Main line route from the western end to the Eglin AFB spray irrigation fields was identified as potentially suitable for the eastern indigo snake. Within this area one inactive gopher tortoise burrow was located west of Garnier Creek. The location of this burrow has been recorded into the Eglin AFB management database. No burrows were located east of Garnier Creek. However, a fresh gopher tortoise track extending for more than 0.5 mile, which was made between two visits to this area separated by 6 hours, was observed, indicating that active burrows are in the area (CH2M HILL, 2010). Because of the time that will pass between the 2010 field reconnaissance and project construction, the Camp Rudder project area will be surveyed again, approximately 60 days prior to the planned start of construction, by Eglin NRS staff to determine whether the eastern indigo snake continues to use habitat along this route and whether there are any active burrows within the project area.

Because of the similarity of appearance of the eastern indigo snake and other large black snakes, any dark snake will be treated as an eastern indigo snake unless positive identification can be made. If an eastern indigo snake is encountered on the work site, work must cease immediately and the snake must be allowed to leave the work area on its own. Any such incidents must be reported to Jackson Guard as soon as possible. If possible, a photograph of the snake should be taken for confirmation of species. The snake may not be handled or harassed in any manner. Relocation of an eastern indigo snake would only take place if the snake is encountered when a tortoise is being removed from a burrow, if the snake is in a location from which it will not move on its own, or if the work area is so large or obstructed that the snake cannot leave on its own.

Eglin AFB is authorized by USFWS to relocate one eastern indigo snake annually (basewide permit TE207027-0). However, it is unlikely that any snakes will need to be

relocated. Each day, the work area will be inspected prior to operation of any vehicles or equipment to determine whether any eastern indigo snakes have entered the work area. Any open trench areas left overnight will be inspected each morning to ensure that no eastern indigo snakes have become inadvertently trapped.

The areas proposed for the lift stations on the existing wastewater pipeline to the APWRF are not conducive to use by the eastern indigo snake. No impacts to the eastern indigo snake or the species' habitat will result from installation of these two lift stations. As a precaution, the proposed lift station areas will be surveyed again, approximately 60 days prior to the planned start of construction, by Eglin NRS staff. Should any eastern indigo snake be found, they will be relocated.

The fiber optic lines will be placed in the same area that was previously disturbed for installation of the wastewater pipelines. Although no new land will be disturbed, eastern indigo snake could enter the work area until work is completed. Daily monitoring for eastern indigo snake will continue through the completion of fiber optic line installation and final soil stabilization. Any eastern indigo snake found in the area will be managed as described for the wastewater pipelines. A pre-construction briefing by Eglin NRS would be required to educate construction personnel about sensitive species and requirements during construction.

The wastewater pipelines, lift stations, and fiber optic lines will be regularly inspected and maintained after construction. No impacts to the eastern indigo snake would be expected from routine inspection and maintenance.

The potential for impacts will end when the project is complete and there will be no potential for this project to then interact with other projects with regard to impacts to the eastern indigo snake. Therefore, no cumulative impacts to the eastern indigo snake would be expected. Eglin NRS believes the proposed action is Not Likely to Adversely Affect the eastern indigo snake.

Other Species Considered:

Gopher Tortoise

The habitat along RR 213 and the southern portion of RR 257 was identified as potentially suitable for the gopher tortoise. However, no gopher tortoise burrows or sign of recent gopher tortoise activity were observed along the proposed Camp Rudder wastewater pipeline route (CH2M HILL, 2010). Because of the time that will pass between the 2010 field reconnaissance and project construction, the Camp Rudder project area will be surveyed again, approximately 60 days prior to the planned start of construction, by Eglin NRS staff to determine whether gopher tortoise are using any portion of the route and whether there are any active burrows within the project area.

The habitat along the proposed Eglin main line route from the western end to the Eglin AFB spray irrigation fields was identified as potentially suitable for the gopher tortoise. Within this area one inactive gopher tortoise burrow was located west of Garnier Creek. No burrows were located east of Garnier Creek. However, a fresh gopher tortoise track extending for more than 0.5 mile, which was made between two visits to this area

separated by 6 hours, was observed (CH2M HILL, 2010). Because of the time that will pass between the 2010 field reconnaissance and project construction, the Camp Rudder project area will be surveyed again, approximately 60 days prior to the planned start of construction, by Eglin NRS staff to determine whether gopher tortoise continue to use habitat along this route and whether there are any active burrows within the project area. Eglin NRS would relocate tortoise by trapping methods and would require one month's notice.

Any tortoise found using an active burrow within the project area at the time of project construction would be relocated. Trained personnel at Eglin AFB are authorized to relocate gopher tortoise from a project area into a holding pen for final relocation. If an active burrow is located outside of the project area, the fencing would be installed to deter a tortoise from entering the construction area.

Each day, the work area will be inspected prior to operation of any vehicles or equipment to determine whether gopher tortoise are in the work area. Any open trench areas left overnight will be inspected each morning to ensure that no gopher tortoise have become inadvertently trapped. Any gopher tortoise found in the work area would be moved outside the construction area.

The areas proposed for the lift stations are on the existing line to the APWRF. No impacts to the gopher tortoise or the species' habitat would result from installation of these two lift stations. As a precaution, the proposed lift station areas would be surveyed again, approximately 60 days prior to the planned start of construction, by Eglin NRS staff. Should any gopher tortoise be found, they would be relocated.

The fiber optic lines would be placed in the same area that was previously disturbed for installation of the wastewater pipeline. Although no new land would be disturbed, gopher tortoise could enter the work area until work is completed. Daily monitoring for gopher tortoises would continue through the completion of installation of the fiber optic lines and final soil stabilization. Any gopher tortoise found in the area would be managed the same as during construction of the wastewater pipelines.

The wastewater pipelines, lift stations, and fiber optic lines would be regularly inspected and maintained after construction. No impacts to the gopher tortoise would be expected from routine inspection and maintenance.

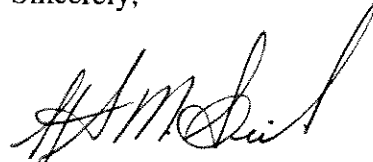
The potential for impacts would end when the project is complete and there would be no potential for this project to then interact with other projects with regard to impacts to the gopher tortoise. Therefore, no cumulative impacts to the gopher tortoise would be expected.

Conclusion

Eglin NRS has determined that the Proposed Action is **not likely to adversely affect** the RCW and eastern indigo snake. Potential impacts to the gopher tortoise would not be significant with implementation of the avoidance and minimization measures described in this biological assessment. Eglin AFB would notify the USFWS immediately if it modifies any of the actions considered in the Proposed Action or if additional

information on listed species becomes available, as the USFWS may require a reinitiation of consultation. If an impact to a listed species occurs beyond what Eglin AFB has considered in this assessment, all operations would cease and Eglin AFB would notify the USFWS. Prior to commencement of activities, Eglin AFB would implement any modifications or conditions resulting from consultation with the USFWS. Eglin NRS believes this fulfills all requirements of the ESA, and that no further action is necessary. If you have any questions regarding this letter or any of the proposed activities, please do not hesitate to contact either Mr. Bob Miller (850) 883-1153 or me at (850) 882-8391.

Sincerely,

A handwritten signature in black ink, appearing to read 'S. M. Seiber', written in a cursive style.

STEPHEN M. SEIBER, GS-13
Chief, Natural Resources Section

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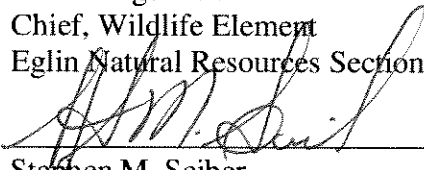
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INFORMAL CONSULTATION REGARDING

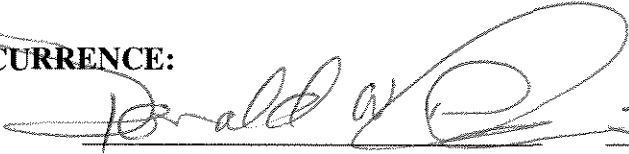
**POTENTIAL IMPACTS TO FEDERALLY LISTED SPECIES RESULTING FROM
THE CONSTRUCTION AND MAINTENANCE OF WASTEWATER PIPELINES
AND LIFT STATIONS AND INSTALLATION OF FIBER OPTIC LINES AT
EGLIN AIR FORCE BASE, FLORIDA**

Reviewed by:  3-9-11
Bob Miller
Endangered Species Biologist
Eglin Natural Resources Section
Date

 3-9-11
Bruce Hagedorn
Chief, Wildlife Element
Eglin Natural Resources Section
Date

 3/9/11
Stephen M. Seiber
Chief, Eglin Natural Resources Section
Date

USFWS CONCURRENCE:

 3/31/11
Project Leader
U.S. Fish and Wildlife Service
Panama City, FL
Date

FWS Log No. 41410 - 2011 - I - 0267

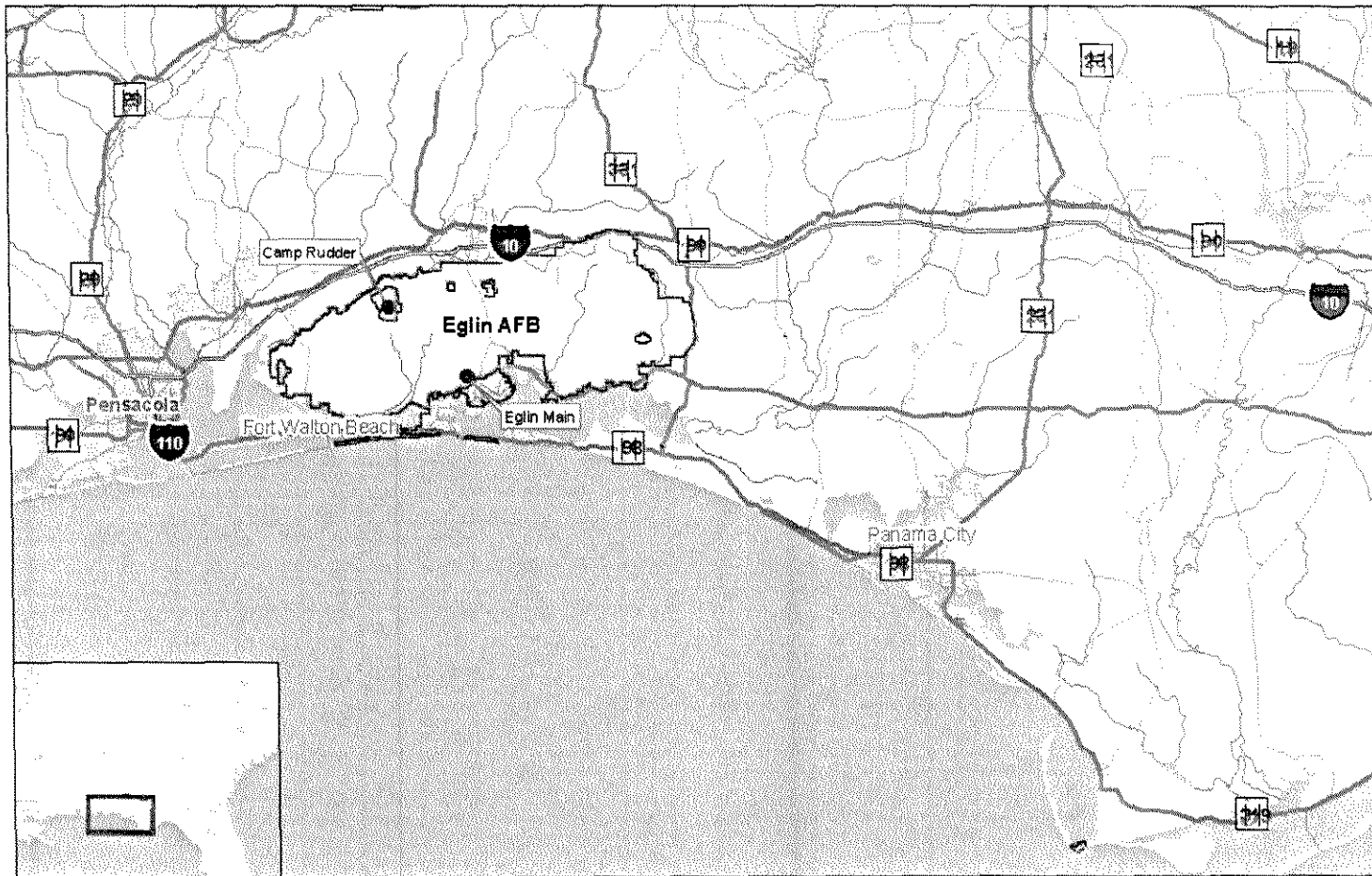


Figure 1
 Location Map
 Wastewater Pipeline
 Eglin Air Force Base

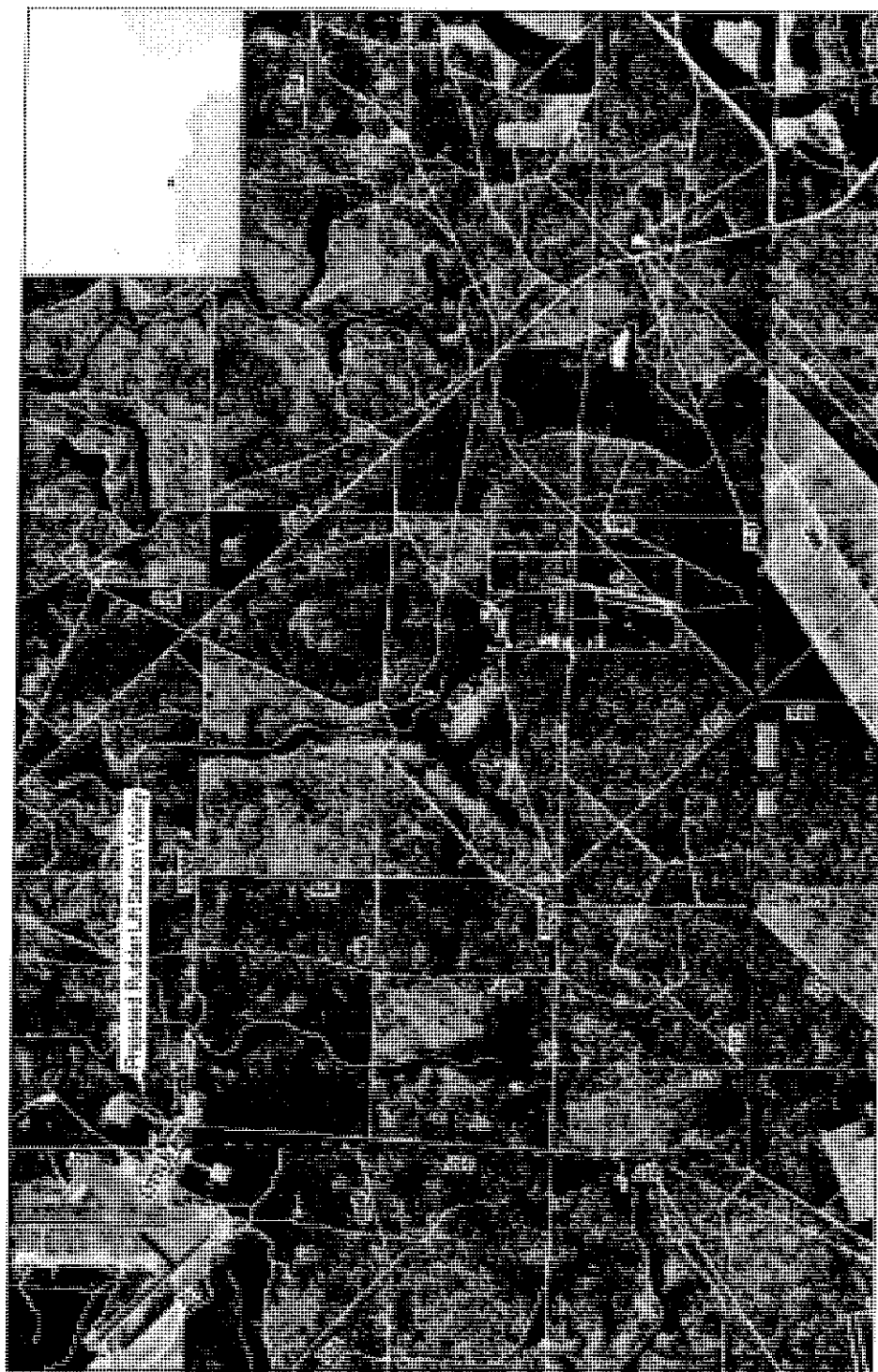




Figure 3
Proposed Eglin Main Line and Lift Stations
Eglin Air Force Base

Legend:
— Proposed Main Line
— Existing Wastewater Line
— Alternative A
— Alternative B
■ Lift Station Vicinity

Scale: 0 3,100 6,200 Feet

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CH2M HILL

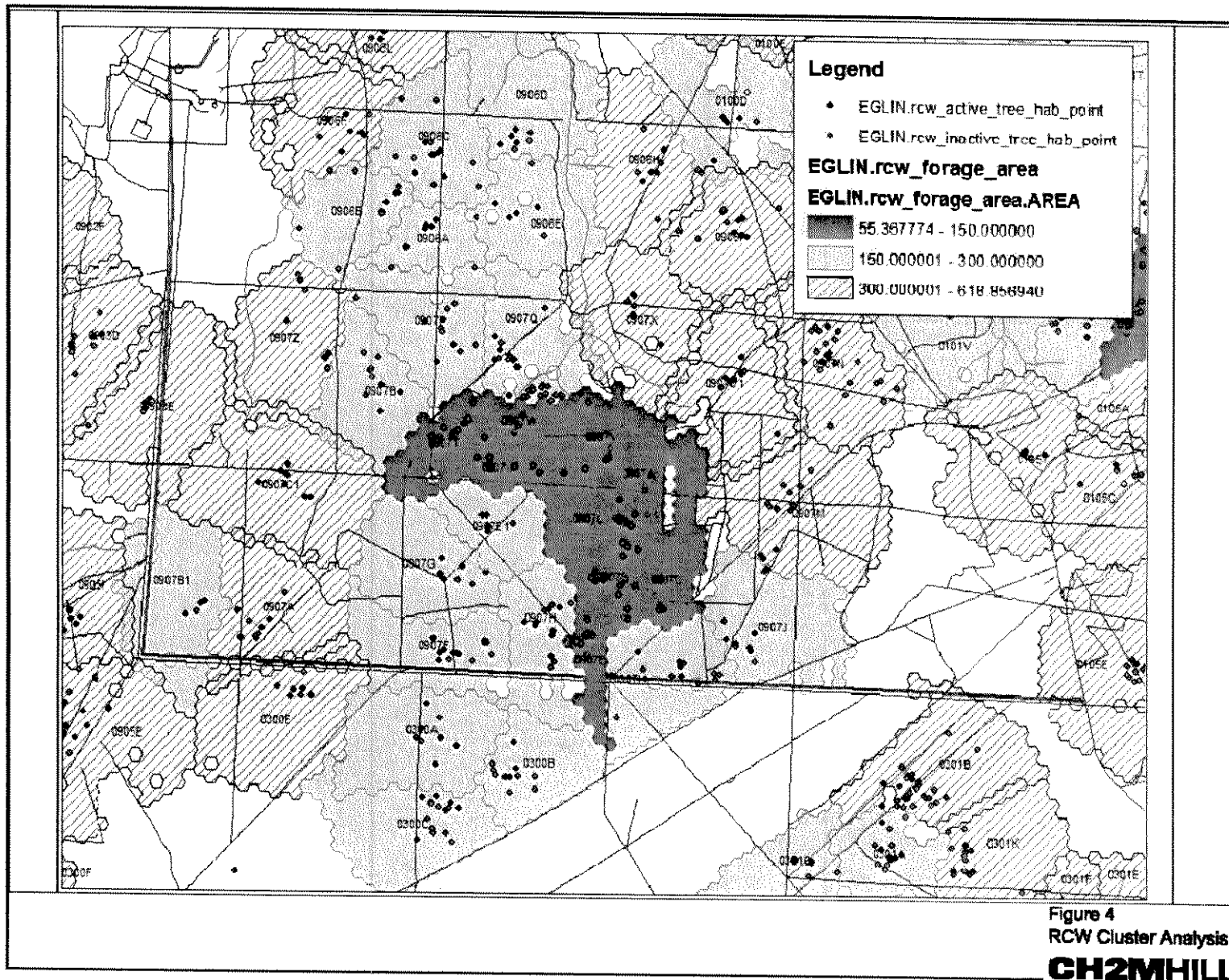


TABLE 1
Red-cockaded Woodpecker Cluster Analysis

Cluster ID	Acres Removed	Acres		Pine BA (sq ft)		Pine Density (total stems >10 in		Determination
		Before	After	Before	After	Before	After	
0903E	1.41	397.49	396.08	12148	12102	9982	9949	No effect – all numbers are above Eglin Recovery Standards
0907A	0.72	317.03	316.31	10262	10239	8429	8412	
0300E	1.26	364.8	363.54	11808	11767	9700	9671	
0301C	0.43	337.1	336.67	10235	10221	8411	8401	
0105E	0.43	523.25	522.82	15712	15698	12912	12902	
0907B1	1.62	276.76	275.14	7720	7668	6345	6308	No effect – While acres are below Recovery Standard, resources are well above the recovery standard
0907F	1.26	259.15	257.89	8135	8094	6345	6308	
0907J	0.23	279.22	278.99	8306	8299	6825	6820	
0907H	0.5	181.15	180.65	5779	5763	4747	4735	Not likely to adversely affect – Numbers are below Recovery Standard but above Managed Stability
0907I	1.19	228.92	227.73	7204	7165	5918	5891	
0907E	0.3	105.67	105.37	3336	3326	2740	2733	<p>No affect, no tree clearing would occur in Cluster 907E. The route alignment will be adjusted to avoid impacts to this cluster.</p> <p>Without the mitigation of adjusting the route, clearing of trees would result in Likely to adversely affect because the initial value is below the Eglin AFB Managed Stability Standard. Any loss of trees would affect this cluster.</p>
Eglin Recovery Standard			Eglin Managed Stability Standard					
Acres		Pine BA	Pine D	Acres		Pine BA	Pine D	
300		6,000	6,000	150		3,000	4,000	

Notes:

All 10 clusters are currently occupied by potential breeding groups.

Midstory on all clusters is less than 7 feet and herbaceous understory is greater than 40%.

APPENDIX E

Coastal Zone Management Act Consistency Determination

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FEDERAL AGENCY COASTAL ZONE MANAGEMENT ACT (CZMA) CONSISTENCY DETERMINATION

Introduction

This document provides the State of Florida with the U.S. Air Force's Consistency Determination under CZMA Section 307 and 15 C.F.R. Part 930 sub-part C. The information in this Consistency Determination is provided pursuant to 15 C.F.R. Section 930.39 and Section 307 of the Coastal Zone Management Act, 16 U.S.C. § 1456, as amended, and its implementing regulations at 15 C.F.R. Part 930.

This federal consistency determination addresses the Proposed Action to construct two new wastewater pipelines and three new lift stations and to install fiber optic lines parallel to the new wastewater pipelines on Eglin Air Force Base (AFB), Florida (Figure 1).

Proposed Federal agency action:

The Proposed Action is for the Okaloosa County Water and Sewer (OCWS) to construct two new wastewater conveyance pipelines and three new lift stations on Eglin Air Force Base (AFB) that would connect with existing lines and would convey Eglin AFB wastewater to the Okaloosa County Water and Sewer (OCWS) Arbennie Pritchett Water Reclamation Facility (APWRF) in Fort Walton Beach (Figure 1). One lift station would be constructed at the northern end of the proposed Camp Rudder wastewater line and two lift stations would be constructed inside the fence of Eglin Main Base to pump into the Plew Sewage Treatment Plant (STP) line (Figure 3). In addition, OCWS would also place fiber optic lines parallel to the wastewater pipelines, but within the area disturbed for pipe installation. The Proposed Action would disturb approximately 30 acres.

Camp Rudder Line

The Camp Rudder line would be up to an 8-inch (in.) diameter pipeline that would originate at the Camp Rudder wastewater plant and follow an unpaved service road to the pool area (Figure 2). From the pool area, the route would continue generally west to Range Road (RR) 257, where it would follow the east side of RR 257 through the fenced area. Once outside the fenced area, the route would continue to follow the east side of RR 257 to its intersection with RR 213. From the intersection of RR 257 and RR 213, the route would generally follow the north side of RR 213 to RR 236. The pipeline would be placed beneath RR 236 by directional bore and connect with the 7SFG Force Main. In addition to the new wastewater pipeline, a new lift station would be built between the pool area and the Camp Rudder wastewater plant.

Where the route parallels RR 213 and RR 257, the wastewater pipeline would be placed outside the existing cleared right-of-way (ROW). This would require clearing of up to 15 feet (ft) of vegetation including longleaf pine (*Pinus palustris*) forest along these roads. For approximately 700 feet along the north side of RR 213, the route would be relocated south into the existing cleared ROW on either the north or south side of the road to avoid tree removal and impacts to RCW habitat cluster 907E. This portion of the line would be installed by trenching in the cleared ROW, if the location of existing buried utility lines allows or by directional bore underneath existing lines in the cleared ROW. If the route

was relocated to the south side of the road a directional bore would be used to cross the road at each end.

No clearing would be required through Camp Rudder except for the section between the pool area and the wastewater plant, where clearing of approximately 15 ft of upland hardwood forest would be required. An approximately 100-ft by 100-ft area, which would include the pipeline corridor, would be cleared for the proposed lift station.

Eglin Main Line

Two alternatives are carried forward for detailed analysis for construction of the Eglin Main line: Alternative A and Alternative B (Figure 3). The routes of the two alternatives coincide west of Garnier Creek and differ along their eastern portions.

Under both alternatives, the Eglin Main line would be up to a 24-in. diameter wastewater pipeline that would originate at the intersection of RR 236 and RR 636, which would be the connection point to the 7SFG Force Main. The route extends eastward through the middle of the Eglin AFB electric transmission ROW. The route continues eastward within the transmission ROW until intersecting a Gulf Power electric transmission easement east of Garnier Creek. The pipeline would be buried along the route. The pipeline would stay within the established ROW for this portion of the route and no forest clearing would result. This portion of the route crosses two perennial streams with fringing wetlands (Garnier Creek and an unnamed tributary of Garnier Creek), which would be crossed by directional bore beneath the stream bottom.

Alternative A

From the Gulf Power ROW, Alternative A continues along the Eglin powerline ROW to the northwest corner of the Eglin AFB spray irrigation fields. At this point, the route departs from the ROW and follows the western edge and then the southern edge of the spray irrigation fields to connect with the Plew Sewage Treatment Plant (STP) line between the two existing lagoons at the southeastern corner of the spray irrigation fields.

Alternative B

Alternative B would depart from the Eglin powerline ROW and follow the west side of the Gulf Power ROW south to General Robert W. Bond Boulevard. Alternative B would stay within previously cleared ROW to the extent practical, but portions of the route would require some clearing of mixed upland forest vegetation along the west side of the ROW. Clearing of up to a 30-ft wide by 200-ft long area may be necessary around each Gulf Power transmission tower guy wire anchor. The route would then parallel the north or south side of General Robert W. Bond Boulevard in the cleared rights-of-way to the northeast and connect with the Plew STP line at State Route (SR) 85. If the route was relocated to the south side of the road a directional bore would be used for access across the road. Alternative B would include a directional bore under SR 85 to reach the tie-in with the Plew STP effluent main on the east side of the road.

Lift Stations

Two lift stations would be constructed along the existing Plew STP line (Figure 3). One lift station would be built in the vicinity of the Eglin Main Wastewater Treatment Plant south of Nomad Road and the other would be built in the vicinity of the Plew STP.

Fiber Optic Lines

Fiber optic lines would be placed parallel to the new wastewater pipelines. After the new pipelines are constructed and the trenches backfilled, fiber optic conduit would be plowed into the same disturbed area prior to final soil stabilization. Fiber optic conduit would be placed parallel to the wastewater pipelines and would be offset by 5 ft. The fiber optic lines would be strung into the conduit later with no additional disturbance.

Federal Consistency Review

Statutes addressed as part of the Florida Coastal Zone Management Program consistency review and considered in the analysis of the Proposed Action are discussed in the following table.

Pursuant to 15 C.F.R. § 930.41, the Florida State Clearinghouse has 60 days from receipt of this document in which to concur with or object to this Consistency Determination, or to request an extension, in writing, under 15 C.F.R. § 930.41(b). Florida's concurrence will be presumed if Eglin AFB does not receive its response on the 60th day from receipt of this determination.

Florida Coastal Management Program Consistency Review

Statute	Consistency	Scope
Chapter 161 <i>Beach and Shore Preservation</i>	<p>The Proposed Action would not affect beach and shore management, specifically as it pertains to:</p> <ul style="list-style-type: none"> • The Coastal Construction Permit Program. • The Coastal Construction Control Line (CCCL) Permit Program. • The Coastal Zone Protection Program. <p>All activities would occur on federal property.</p>	<p>This statute provides policy for the regulation of construction, reconstruction, and other physical activities related to the beaches and shores of the state. Additionally, this statute requires the restoration and maintenance of critically eroding beaches.</p>
Chapter 163, Part II <i>Growth Policy; County and Municipal Planning; Land Development Regulation</i>	<p>The Proposed Action would not affect local government comprehensive plans.</p>	<p>Requires local governments to prepare, adopt, and implement comprehensive plans that encourage the most appropriate use of land and natural resources in a manner consistent with the public interest.</p>
Chapter 186 <i>State and Regional Planning</i>	<p>The Proposed Action would be consistent with Florida's statutes and regulations regarding state plans for water use, land development or transportation.</p>	<p>Details state-level planning efforts. Requires the development of special statewide plans governing water use, land development, and transportation.</p>
Chapter 252 <i>Emergency Management</i>	<p>The Proposed Action would not affect the state's vulnerability to natural disasters.</p> <p>The Proposed Action would not affect emergency response and evacuation procedures.</p>	<p>Provides for planning and implementation of the state's response to, efforts to recover from, and the mitigation of natural and manmade disasters.</p>
Chapter 253 <i>State Lands</i>	<p>All actions will take place within Eglin property.</p> <p>Therefore, the Proposed Action would not negatively affect state lands.</p>	<p>Addresses the state's administration of public lands and property of this state and provides direction regarding the acquisition, disposal, and management of all state lands.</p>
Chapter 258 <i>State Parks and Preserves</i>	<p>All actions would take place within Eglin property.</p> <p>Therefore, the Proposed Action would not negatively affect state parks, recreational areas and aquatic preserves.</p>	<p>Addresses administration and management of state parks and preserves.</p>
Chapter 259 <i>Land Acquisition for Conservation or Recreation</i>	<p>The Proposed Action would not affect tourism and/or outdoor recreation.</p>	<p>Authorizes acquisition of environmentally endangered lands and outdoor recreation lands.</p>
Chapter 260 <i>Florida Greenways and Trails Act</i>	<p>The Proposed Action would not affect the Greenways and Trails Program.</p>	<p>Established in order to conserve, develop, and use the natural resources of Florida for healthful and recreational purposes.</p>
Chapter 267 <i>Historical Resources</i>	<p>Consultation with the State Historic Preservation Office (SHPO) is currently</p>	<p>Addresses management and preservation of the state's</p>

	<p>underway for this project and will be completed prior to project initiation. 96 CEG/CEVH, Cultural Resources is conducting surveys to ensure mitigation of impacts to resources, and will coordinate minimization and avoidance requirements with the SHPO. Identified resources would be managed in compliance with Federal Law and Air Force regulations.</p> <p>Should other archaeological sites be inadvertently discovered from ground disturbing activities, 96 CEG/CEVH, Cultural Resources, would be notified immediately and further ground-disturbing activities would cease in that area.</p> <p>Therefore, the Proposed Action would be consistent with Florida's statutes and regulations regarding the state's archaeological and historical resources.</p>	archaeological and historical resources.
Chapter 288 <i>Commercial Development and Capital Improvements</i>	The Proposed Action would occur on federal property and would not affect future business opportunities on state lands, or the promotion of tourism in the region.	Promotes and develops general business, trade, and tourism components of the state economy
Chapter 334 <i>Transportation Administration</i>	<p>Activities associated with the Proposed Action would be entirely within Eglin AFB. Paved roads would be directionally bored and would not be impacted.</p> <p>Therefore, the Proposed Action would not affect the planning needs of the state's transportation administration.</p>	Addresses the state's policy concerning transportation administration.
Chapter 339 <i>Transportation Finance and Planning</i>	The Proposed Action would not affect the finance and planning needs of the state's transportation system.	Addresses the finance and planning needs of the state's transportation system.
Chapter 373 <i>Water Resources</i>	The project design would include appropriate construction stormwater BMPs that would be implemented and maintained to minimize the potential for sediment erosion or turbidity impacts to surface waters. The lift station sites and pipeline ROWs would, to the extent practicable, be graded to retain stormwater and allow infiltration. Geotechnical analysis determined that the soil infiltration rate is sufficient to prevent stormwater runoff and avoid impacts to potential receiving waters. OCWS will obtain a National Pollutant Discharge Elimination System (NPDES) stormwater permit from FDEP, pursuant to Chapter 62-621 of the Florida Administrative Code, prior to any ground-disturbing activities. An Erosion Control Plan will be filed as part of the	Addresses sustainable water management; the conservation of surface and ground waters for full beneficial use; the preservation of natural resources, fish, and wildlife; protecting public land; and promoting the health and general welfare of Floridians.

	<p>preconstruction activities.</p> <p>Therefore, the Proposed Action would be consistent with Florida's statutes and regulations regarding the water resources of the state.</p>	
<p>Chapter 375</p> <p><i>Outdoor Recreation and Conservation Lands</i></p>	<p>The Proposed Action would not affect opportunities for recreation on state lands.</p>	<p>Develops comprehensive multipurpose outdoor recreation plan to document recreational supply and demand, describe current recreational opportunities, estimate need for additional recreational opportunities, and propose means to meet the identified needs.</p>
<p>Chapter 376</p> <p><i>Pollutant Discharge Prevention and Removal</i></p>	<p>Vehicles and equipment would not be serviced or refueled on-site. The contractor would develop and implement an appropriate spill prevention and protection plan during all work.</p> <p>The Proposed Action would not affect the transfer, storage, or transportation of pollutants.</p>	<p>Regulates transfer, storage, and transportation of pollutants, and cleanup of pollutant discharges.</p>
<p>Chapter 377</p> <p><i>Energy Resources</i></p>	<p>The Proposed Action would not affect energy resource production, including oil and gas, and/or the transportation of oil and gas.</p>	<p>Addresses regulation, planning, and development of oil and gas resources of the state.</p>
<p>Chapter 379</p> <p><i>Fish and Wildlife Conservation</i></p>	<p>Eglin Natural Resources would conduct gopher tortoise survey prior to construction. If necessary, gopher tortoise and/or commensals will be relocated in accordance with Eglin's Gopher Tortoise Relocation Permit. Minimal encroachment into Red cockaded woodpecker's foraging habitat would occur. Eglin has consulted with USFWS and appropriate mitigation will be implemented. The proposed action would not have a negative impact on wildlife resources.</p> <p>The Proposed Action would not affect wildlife resources.</p>	<p>Addresses the management and protection of the state of Florida's wide diversity of fish and wildlife resources.</p>
<p>Chapter 380</p> <p><i>Land and Water Management</i></p>	<p>The Proposed Action would occur on federally owned lands. Under the proposed action, development of state lands with regional (i.e. more than one county) impacts would not occur. No changes to coastal infrastructure such as capacity increases of existing coastal infrastructure, or use of state funds for infrastructure planning, designing or construction would occur.</p>	<p>Establishes land and water management policies to guide and coordinate local decisions relating to growth and development.</p>

Chapter 381 <i>Public Health, General Provisions</i>	The Proposed Action would not affect the state's policy concerning the public health system.	Establishes public policy concerning the state's public health system.
Chapter 388 <i>Mosquito Control</i>	The Proposed Action would not affect mosquito control efforts.	Addresses mosquito control effort in the state.
Chapter 403 <i>Environmental Control</i>	<p>Eglin Water Resources (96 CEG/CEVCE) would coordinate all applicable permits in accordance with the FAC.</p> <p>Air quality impacts from the Proposed Action would be minimal. Eglin AFB would take reasonable precautions to minimize fugitive particulate (dust) emissions during any construction activities in accordance with FAC 62-296.</p> <p>OCWS would obtain a National Pollutant Discharge Elimination System (NPDES) stormwater permit from FDEP, pursuant to Chapter 62-621 of the Florida Administrative Code, prior to any ground-disturbing activities. An Erosion Control Plan would be filed as part of the preconstruction activities.</p> <p>Therefore, the Proposed Action would not affect water quality, air quality, pollution control, solid waste management, or other environmental control efforts.</p>	Establishes public policy concerning environmental control in the state.
Chapter 582 <i>Soil and Water Conservation</i>	<p>Stormwater runoff from construction near creeks would have the potential to negatively impact surface waters. However, the project design would include appropriate construction stormwater BMPs that would be implemented and maintained to minimize the potential for sediment erosion or turbidity impacts to surface waters. An Erosion Control Plan would be filed as part of the preconstruction activities. Use of BMPs and post-construction stormwater controls, as appropriate, would minimize the potential for impacts, such that any incidental impacts would be temporary and less than significant.</p> <p>Therefore, the Proposed Action would not affect soil and water conservation efforts.</p>	Provides for the control and prevention of soil erosion.

